E!

for the

YAMAHA

DX7II

series

GREY MATTER

GRey MAtteR REspOnsE inc
made in the USA

GREY MATTER

Contents

Getting started

This is it. E! for the DX7II series. It's the next generation of innovative ideas and powerful capabilities in the evolution of the legendary Yamaha DX series. From polytimbral FM voices to an on-board 16 track SE!quencer, your E!quipped DX7II/DX7s is the premiere performance instrument that also doubles as an entire MIDI studio.

Along with new ideas and capabilities come new things to learn. In order to take full advantage of everything E! has to offer, Grey Matter suggest that you read this manual thoroughly - beginning with the overview of E! on the next four pages and continuing on with complete descriptions of the Octal mode, ENGINE, and SE!quencer. Once you've taken the time to get to know E!, you'll be ready to explore with the most amazing performance instrument you've ever experienced- your E!quipped DX7II/DX7s.

Although E! gives your DX7II/DX7s many new features, you may have noticed that there aren't any new buttons or switches on the DX's control panel. That's because E!'s functions are so well integrated into the DX that you can access them right along with all the original DX functions. After working with E! for just a while you'll be using these new features just like any other DX parameter. Here's a brief overview of some of these features, starting with E!'s new polytimbral Voice mode - the Octal mode:

The Octal mode

One of E!'s most exciting additions to the DX7II series is the Octal mode where you can play up to 8 internal DX Voices at the same time. Any internal DX Voice, from any one of E!'s memory banks, can be played in the Octal mode. When you combine these voices with E!'s amazing ENGINE and SE!quencer, you've got an entire MIDI studio right in your DX!

ENGINE

ENGINE is the heart of the entire E! system - it's sort of a "clearing house" for all of your DX and MIDI data. As a 16 track event processor, ENGINE lets you control all data that is coming in and going out of the DX. With its 8 Performance modes, like Chords and Player, you can play 16 track arpeggios, ostinato patterns, and multi-timbral chords - all triggered by hitting one key. And, best of all, every ENGINE parameter is fully program-mable! Just store each set-up into one of E!'s 128 Performances - for every Performance E! will send out a 16 track Patch Map to your MIDI gear, call up your DX Voices from Octal mode, and even load a Song from SE!quencer. It's really incredible!

SE!quencer

And then there's SE!quencer, the most powerful MIDI recorder of it's kind. In many ways, it's just like a 16 track tape recorder - you can record, playback, even edit - for both the DX and any MIDI channel. If this is your first time working with a sequencer you will find E!'s SE!quencer to be quite simple to understand and easy to use. If you are already familiar with other sequencers, you will find SE!quencer to be a full-featured MIDI data recorder with advanced capabilities like step editing, quantization, and tempo record. Now you can record and play 16 track Patterns and Songs wherever you are with your DX - at home, in the studio, even on stage.

Before you explore these amazing features in detail, be sure to look over the next two pages for some basic information on selecting and loading Voices with E!'s 4 memory banks, and on E!'s MIDI implementation.

Selecting Voices

Selecting a patch from one of E!'s 4 memory banks is easy. Just use the data entry buttons (+/-) to choose which bank you want to be in. Then simply select the patch number that you want (from 1 to 64) and that's it. The total number of patches the E! can store internally is 256.

DX7II screen

Voice		E! Bank 1	E1-15 PianoBells
Single			

DX7s screen

Voice	Single
E1-15	PianoBells

-1/NO	+1/YES

use the data entry buttons to select the E! memory bank

1 33	*thru*	32 64

select from patches 1-64 for each memory bank

Loading Voices

Loading patches from a cartridge or via MIDI is also easy. First, select one of E!'s 4 memory banks and then select a patch from that bank (it's O.K. if there are no patches stored in this bank yet - doing this simply makes the bank "active".)

Now, assuming that Internal Memory Protect is OFF, all you have to do is enter the Edit mode and load the patches as you normally would (see your Yamaha DX7II/ DX7s owner's manual for more information.) To load into another memory bank, just select that bank, choose a patch to make it active, and load your voices.

E! and the DX's MIDI implementation

Channel	>Trns ch		Rcv ch	>A	>B	>Omni
Messages	off			off	off	off

With ENGINE, the DX is able to process all 16 MIDI channels simultaneously - something that was obviously not possible before E! was installed. You can filter channels on or off, merge data, even change patch numbers directly from the DX.

In order to do all this, ENGINE overrides the DX's MIDI implementation - that is, **only if you have turned the DX's MIDI Receive/Transmit channels and OMNI mode OFF will ENGINE process the data correctly.**

See the Trouble shooting chapter at the end of this manual for information regarding the proper set-up of your MIDI system with ENGINE.

The official E! sticker

The distinctive, handsome, and downright striking E! sticker has been included for you to place directly on the DX's front panel. Making sure that there is no oil or dirt on the metal, simply remove the sticker's paper backing and gently place it between the Yamaha DX logo and the algorithm charts.

ENGINE

Musicians, start your ENGINE! Your E!quipped DX7II/DX7s has, among many other things, a 16-track DX/MIDI-event-processor that we call ENGINE. Now you can control the DX and your entire MIDI setup right from the DX's keyboard. Even if you don't have an extensive MIDI setup, you can use ENGINE with the Octal mode, which lets you play up to 8 internal DX Voices at the same time. From its 16-track patch mapping and Velocity Processing to the amazing Performance modes, ENGINE will process your DX and all your MIDI gear together, treating them as different parts of the same instrument. Just follow the diagrams and read about the incredible possibilities of ENGINE:

How to enter ENGINE

Using ENGINE on the DX7s

press

EDIT

then press an
ENGINE menu
button

PERFORMANCE
FS
CS   VOICE MODE   MICRO TUNE   PAN

27   59   **28**   60   **29**   61   **30**

ENGINE menu
buttons

Due to the smaller LCD screen on the DX7s, viewing
every parameter of each ENGINE menu at the same time
is not possible. In order to view every parameter, simply
press the (right) Cursor button, which will "move" the
ENGINE menu on the screen, as in the example:

DX7II screen

TR	>Dest	>Transpose	>Patch	>Curve	>Level
09	DX D	+12	----	NORM	02

DX7s screen

TR	>Dest
09	DX D

press

▶

>Transpose	>Patch
+12	----

press again

▶

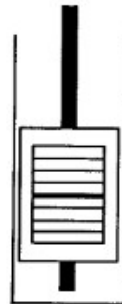| >Curve	>Level
NORM	02

Adjusting ENGINE parameters

◄   ►
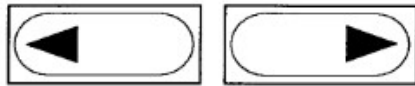
to select a
parameter,
move the
Cursor by
pressing the
Cursor buttons

TR	>Dest	Transpose	>Patch	>Curve	>Level
09	DX D	+12	----	NORM	02

or

-1/OFF   +1/ON

use the data
entry slider or
the +/- buttons
to adjust the
value

ENGINE: an overview

ENGINE is a 16-track event processor for all DX Voices and any MIDI channel. What exactly does that mean, you may be wondering? Well, for one thing, ENGINE allows you to control your entire setup (the DX and MIDI) from one location - namely, the DX keyboard. In this way, you can take up to 16 separate MIDI instruments, plus up to 8 internal DX Voices, and play them all from the DX. However, with ENGINE, "play" doesn't mean a simple merge where depressing a key will send the same information to all MIDI channels. ENGINE is much more than that, because each of its 16 Tracks can play a separate part to a separate instrument - all at the same time!

TR	>Dest	>Transpose	>Patch	>Curve	>Level
09	DX D	+12	----	NORM	02

Any instrument, DX or MIDI, can play on any Track. Selecting an instrument for each Track is done in the main ENGINE menu, the Track Assign menu. It is here that you can cycle thru all 16 Tracks and choose the instrument (we call it a "Destination") that will play on each Track. You can even assign a separate transpose value and velocity response to each Track - ENGINE will send this information to any internal DX Voice or any MIDI channel, wherever you tell it to.

> Voice mode
octal

Even if your E!quipped DX is the only MIDI instrument you have, you can use ENGINE's amazing capabilities in any DX Voice mode - including the Octal mode, where you can play up to 8 internal DX Voices at a time. That's right, you can play 8 different internal Voices simultaneously, with each Voice assigned to a separate Track. With ENGINE and the Octal mode, an E!quipped DX7II/DX7s really is a self-contained MIDI studio.

| > Perf mode	> Song	> Tempo	> Sync
Player	02	150	INT

And then there are the 8 Performance modes to realize the full potential of ENGINE. Not only are there are different styles of "splits", like the Floating Split, which has a split point that dynamically follows your right hand up and down the keyboard, but there are also incredible new auto-accompaniment modes like Chords and Player, which let you play 16 track arpeggios, ostinato patterns, and complex rhythms - all done by hitting one key! ENGINE's Performance modes really put the "live" back into live performance.

And finally, every ENGINE parameter is fully programmable - just set everything up the way you want and store it all into one of the 128 programmable Performances. Now that you have a general idea about the many capabilities of ENGINE, go ahead and read each discussion for more complete information.

ENGINE menus

The ENGINE menus can be divided into three groups: the Controller menus, the Performance/Voice mode menus, and the DX Voice menus. To make it easier for you to organize these menus, each group has been assigned its own ENGINE menu button. Just press these buttons repeatedly to cycle thru the ENGINE menus and follow the diagrams:

ENGINE menu buttons
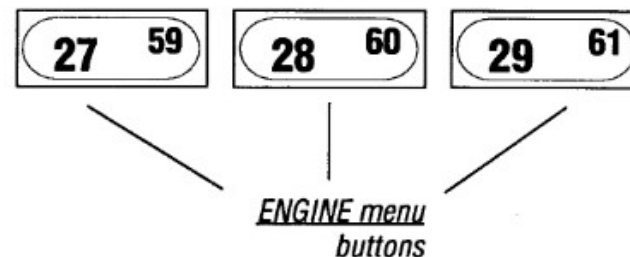
Controller menus

```
 27  59      28  60      29  61
```

*press button 27
to cycle thru
the Controller
menus*

Sustain foot switch	>A	>B
(64)	on	on

This menu remains exactly as it was before E! Please
refer to your Yamaha DX7II/DX7s owner's manual for
more information.

ENGINE menu 1

```
CS2      >Select
[10]        Tempo
```

This menu remains exactly as it was before E!, with the exception that CS1 and CS2 can be set to be a Tempo control for Player and SE!quencer.

For information regarding the other possible CS1/CS2 Select modes, please refer to your Yamaha DX7II/DX7s owner's manual.

ENGINE menu 2


```
>Controller    > Destination
AFT TOUCH         Track 1
```

This is the Controller Map menu, where you can remap each of the DX's controllers to any of ENGINE's 16 Tracks. For example, you can set it up so that triggering AfterTouch on the DX keyboard will affect only voices currently being played by Track 1, while the Pitch Bend may affect only voices being played by Track 2. (Note: these settings are active only in the "live" Performance mode.)

①

```
>Controller

AFT TOUCH
```

There are 17 controllers to choose from: AfterTouch, MIDI controller, Modulation Wheel, Breath control, Foot control, Portamento (time), Data entry, FC1 and 2, CS1 and 2, Sustain, Portamento (on/off), Key Hold, Soft, FS2, and Pitch Bend.

②

```
> Destination

Track 1
```

You can remap each controller to any of ENGINE's 16 Tracks (see the Track Assign menu for more information.)

ENGINE menu 3

```
Foot switch    >Select    >A     >B
(64-67)        ENGINE     ---    ---
```

This menu remains exactly as it was before E!, with the exception that one more mode, the ENGINE mode, has been added to the Foot Switch Select. When it is set to ENGINE, the Foot Switch (2) will act as a Stop switch for both Player and SE!quencer, and as a Track select switch in the Normal1 and Normal2 Performance modes (all of which are discussed later in the manual.)

For information regarding the other possible Foot Switch Select modes, please refer to your Yamaha DX7II/DX7s owner's manual.

Performance/Voice mode menus

27 59   28 60   29 61
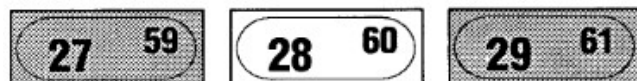
press button 28
to cycle thru the
Performance/
Voicemode
menus

ENGINE menu 1

>Perf mode	>Song	>Tempo	>Sync
Player	04	120	INT

With this menu you will select the current ENGINE
Performance mode. Please refer to the Performance
modes chapter for a complete explanation.

ENGINE menu 2

1   2   3   4   5   6

TR	>Dest	>Transpose	>Patch	>Curve	>Level
09	MIDI 06	+12	51	POS 1	06
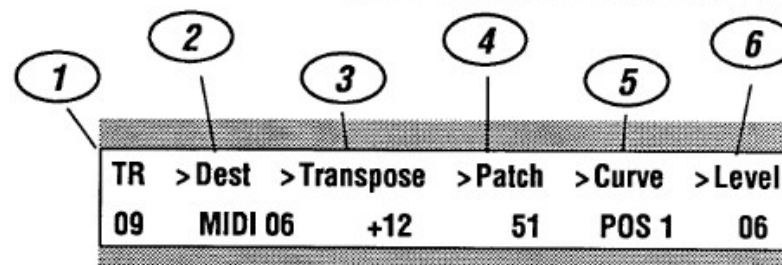
read as   *"Track 9 is being played by MIDI channel 6, patch 51. It*
is being transposed 12 notes up. The Velocity Curve is
Positive1 and the Velocity Level is 6."

This is ENGINE's main menu, the Track Assign menu,
where you direct the ENGINE data for each Track to any
internal DX Voice or any MIDI channel. You can also
use this menu to change patches on any MIDI channel,
transpose these patches, and enhance their dynamic
levels with E!'s exclusive Velocity Processing.

Although very simple, it is important to fully understand
the functions of this menu - you will find it to be an
integral part of most every feature of your E!quipped
DX7II/DX7s.

1

TR	>D
09	D

There are 16 Tracks which direct ENGINE data to any
Destination. Each Track can process up to 16 notes at a
time.

always use the Key Set
buttons to adjust the
Track number

(2)

```
TR  >Dest  >
09   MIDI 06
```

The Destination of a Track is where all data from that Track will be sent. In ALL Performance modes, each Track must have a Destination in order to hear any sound.

EXAMPLE 1: If you are in the Normal1 play mode, Track 1 will be the active keyboard Track - so, the Destination of Track 1 should be the DX Voice or MIDI channel that you want to play.

EXAMPLE 2: If you are in the SE!quencer mode, each Track that you record must also have a DX Voice or a MIDI channel Destination. If you want to change the sound of a recorded Track, just change its Destination. You can even have the same Destination play multiple Tracks.

Possible Destinations are:

• Any internal DX Voice (in the Single, Dual, and Split modes the screen will simply read "DX"; in the Octal mode, you will choose between DX Voices A thru H)

• Any of the 16 MIDI channels.
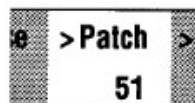
• A track can also be turned OFF.

(3)

>Transpose

+12

Use this parameter to transpose any DX or MIDI patch. The value on the screen refers to notes (+12 means 12 notes, or 1 octave, up.) The range, both up and down, is 2 octaves.
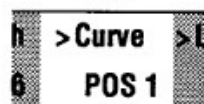
4

> Patch >

51

*the MIDI patch
number range
is 0 to 127*

If your Destination is one of the 16 MIDI channels, you can use this parameter to change the patch number without even moving from the DX keyboard. And once you have stored all of your ENGINE settings into a Performance, E! will transmit a 16-track patch map to set up your MIDI devices.

5

> Curve >

POS 1

*use the POS1
and POS2
curves to
extend the MIDI
velocity output
range to 127*

The Velocity Curve determines the overall character of velocity response for any internal DX or MIDI patch. There are four Curves to choose from:

• NORM - this is the DX's original velocity curve.

• POS1 - this curve is biased so that the output velocity will be *higher* than what is really played.

• POS2 - this curve makes it easy to produce *very low* or *very high* velocities. Playing with anything up to medium velocity will output a low velocity, while playing with anything over medium velocity will output a high velocity.

• NEG - this curve will output the *opposite* velocity of what is really played (playing soft will sound loud, while playing hard will sound soft.)

6

> Level

RM 06
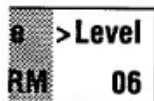
*the "normal"
Velocity Level
is 05*

The Velocity Level acts as a volume/brightness control for any internal DX or MIDI patch. Not only are you able to scale down patches that may be "too loud", you can also "overdrive" them to a level that isn't humanly possible to play, making sounds brighter than you've ever heard them before.

Track 1: the "live play" Track

Track 1 is ENGINE's "live play" Track. In most Performance modes, keys that you play LIVE on the DX keyboard will be played "thru" Track 1.

EXAMPLE 1: In the Normal mode, if Track 1 is set with a Destination of MIDI 05, notes played on the keyboard will be output to MIDI channel 5.

EXAMPLE 2: While playing a pre-recorded Song in SE!quencer, you can play Track 1 live on the DX keyboard - just choose whatever Destination you like and all notes played live on the keyboard will be sent there.

ENGINE menu 3

>Note	>Key	>Scale	>Pattern
C	C	C	2

This is ENGINE's Tonal Processor, which is used to program tonal patterns in Chords and Player. Please see the <u>Performance modes</u> chapter for a full explanation.

ENGINE menu 4

>Voice mode
octal

With E!, there are four DX Voice modes: Single, Dual, and Split (all of which are exactly the same as the original DX7II Voice modes), or Octal mode, which lets you play up to 8 DX voices at once.

The Voice modes are discussed on the following two pages:

Single mode

>Voice mode	Voice A	Voice B
single	E2- 15	----

See the next page about selecting Voices.

Dual mode

>Voice mode	Voice A	Voice B
dual	E2-15	E3-07

In the Dual mode, you can layer any two DX voices together. This means that when you play any note, both Voice A and Voice B will play together. This also means that the polyphony of the DX is reduced to 8 notes in this mode.

If your DX is set to the Dual mode, the Dual Detune screen will appear as you cycle through the menus. This parameter will shift the pitch of both Voices in equal increments of 1/32 steps (0= original pitch, 8=1/4 step detune.) Voice A is shifted up, and Voice B is shifted down.

>Dual detune
2

See the next page about selecting Voice A and Voice B.

Split mode

>Voice mode	Voice A	Voice B
split	E2-15	E3-07

In the Split mode, you can choose a point on the DX keyboard where Voice A and Voice B are split (one part of the keyboard plays Voice A and another part plays Voice B.) Again, playing in the Split mode reduces the polyphony of both Voices to 8 notes each.

If the DX is set to Split mode, the Split Point screen will appear as you cycle thru the menus - this is where you set which note will mark the split between the DX Voices. You can set this point by moving the data entry slider, or by simply pressing the actual note down on the keyboard.

>Split point
G#4

See the next page about selecting Voice A and Voice B.

Octal mode
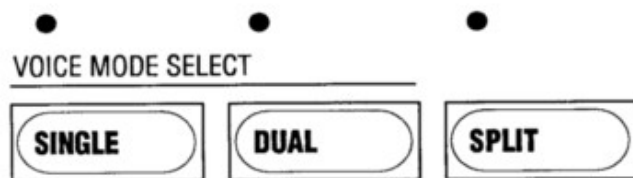
>Voice mode
octal

In the Octal mode, you can play up to 8 DX Voices simultaneously. Please see the Octal mode chapter for a full explanation.

How to select voices

On the DX7II

●   ●   ●

VOICE MODE SELECT

| SINGLE | DUAL | SPLIT |

Press the Voice mode select button that corresponds to the chosen ENGINE Voice mode. Use the "A/B" button to choose Voice A and Voice B.

If the Voice mode is set to Octal, press any one of these buttons to make it active. Use the "A/B" button to cycle thru Voices A to H.

On the DX7s

FRACTIONAL/MICRO TUNE

◄   KEY SET   ►

| VOICE | INT/CRT |
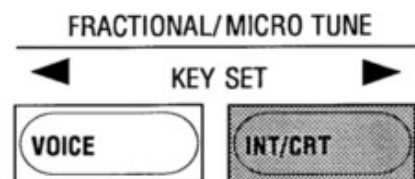
Press the Voice button to activate the chosen ENGINE Voice mode.

Press this button repeatedly to choose Voices A and B in the Dual and Split modes, and to choose Voices A thru H in the Octal mode.

ENGINE menu 5

① ②

> Total Volume   > Balance

87   +35

①

> **Total Volume**

87

This parameter lets you set an overall volume for the DX Voices.

②

> **Balance**

+35

If your DX is set to Dual or Split Voice modes, you can use this parameter to adjust the relative volumes of Voice A and Voice B. Values below zero bias the volume towards Voice A, while values above zero bias the volume towards Voice B ("zero" is an equally balanced volume.)

DX voice menus

| 27 | 59 | | 28 | 60 | | 29 | 61 |

*press button 29
to cycle thru the
DX voice menus*

ENGINE menu 1

DX	>A	>B	>C	>D	>E	>F	>G	>H
Volume	92	128	102	65	128	128	0	128

If your DX is set to the Octal Voice mode, this menu will appear as you cycle thru the button 29 ENGINE menus. The DX Volume menu is a "mixer" for all 8 DX Voices. Simply select each individual Voice and adjust the volume (from 0 to 128).

ENGINE menu 2

NOTE	>A	>B	>C	>D	>E	>F	>G	>H
Shift	0	0	-1	+2	0	-3	0	+4

The Note Shift menu remains exactly as it was before E!, with the exception that, in the Octal mode, all 8 DX Voices can be shifted. Please refer to your Yamaha DX7II/DX7s owner's manual for more information.

Use the Note Shift parameter in conjunction with the Transpose parameter (in the Track Assign menu) to extend the amount of transposition possible for each DX Voice.

ENGINE menu 3

Micro tuning	>Table select
	Twelve tone 09

The Micro Tuning Select menu remains exactly as it was before E!, with the exception that E! expands the internal memory for user-defined (twelve tone) tunings. Please see the Expanded Micro Tuning chapter for a full explanation.

For more information about the Micro Tuning Select menu, please refer to your Yamaha DX7II/DX7s owner's manual.

ENGINE menu 4

Micro-	>A	>B	>C	>D	>E	>F	>G	>H
Tuning	on	on	off	off	off	off	on	off

If you are in any Voice mode other than Single, and if you have selected a Micro Tuning other than Preset 1 (the "normal" DX scale), you can turn the alternate tuning on or off for every active DX Voice.

ENGINE menu 5

DX		>A	>B	>C	>D	>E	>F	>G	>H
Polyphony		8	4	2	2	---	---	---	---

If your DX is set to the Octal Voice mode, the DX Polyphony menu will appear as you cycle thru the button 29 ENGINE menus. With this menu, you can determine the amount of polyphony for each DX Voice.

What is "polyphony?" It is the total number of notes that the DX can play at one time - once you exceed the limit, notes that you play will cut out sharply (and unpleasantly.) On both the DX7II and the DX7s the polyphony

is a total of 16 notes, which could lead to problems in the Octal Voice mode, where you can play up to 8 different voices at the same time. To avoid any problems, you can use the DX Polyphony menu to manually adjust the total number of notes for each Voice, according to how many notes per Voice you are expecting to use.

You can also use E!s exclusive Dynamic Voice Allocation as another way of adjusting the DX's polyphony in Octal mode. Dynamic Voice Allocation is explained further on in this section.

In order to hear any sound from a DX Voice, at least 2 notes must be allocated to it in the Polyphony menu.

These examples show two possible ways to manually set the DX Polyphony

DX		>A	>B	>C	>D	>E	>F	>G	>H
Polyphony		12	4	---	---	---	---	---	---

E! biases polyphony in a descending order, from Voice A to Voice H

DX		>A	>B	>C	>D	>E	>F	>G	>H
Polyphony		2	2	2	2	2	2	2	2

ENGINE menu 6

split between
Track 1 and Track 2

8 Way	>12	>23	>34	>45	>56	>67	>78
Split point	048	060	072	084	096	128	128

MIDI note
number 48

If you have the ENGINE Performance mode set to 8 Way Split, the 8 Way Split Point menu will appear as you cycle thru the button 29 ENGINE menus.
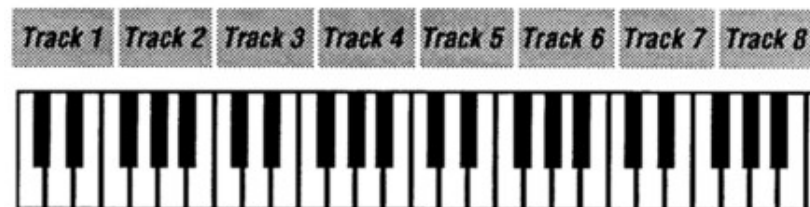
With the 8 Way Split Point menu you can set up to 7 different split points between Tracks 1 thru 8 of ENGINE - the instrument (DX Voices or MIDI) that will be playing each Track depends on the Destinations that you set for them.

The number pairs on the top row of the LCD screen tell you which split point you are adjusting ("12" is the split point between Tracks 1 and 2, "23" is the split point between Tracks 2 and 3, and so on.) the values on the bottom row of the LCD screen are MIDI note numbers, with a range from 001 to 128.

To set a split point, simply adjust the MIDI note number underneath each Track Split number, beginning with Track 1/Track 2. Tracks cannot overlap, so each successive split between Tracks must be at a higher MIDI number than the previous one.

◄
MIDI notes
01 to 35

►
MIDI notes
97 to 128

├──── MIDI notes 36-96 ────┤

These are two
possible ways
to set the Split
Points

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8

All 8 Tracks can be played on the DX keyboard

Track 1	Track 2	Track 3

Tracks 4-8 are set out of the range of the DX keyboard

ENGINE menu 6

>DVA   >Clock out   >Chord Hold   >MIDI in

on   off   on   direct

1

>DVA >Cl
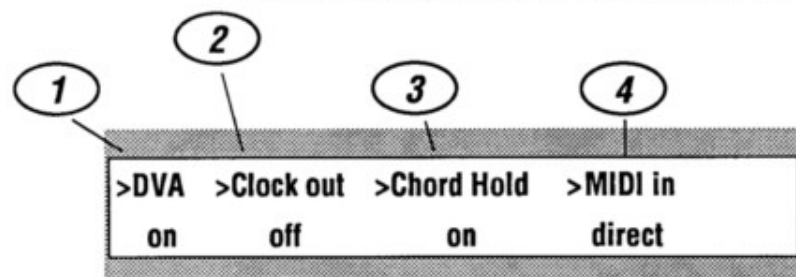
on

This parameter will turn on E!'s exclusive Dynamic Voice Allocation (DVA), which enhances the DX's polyphony by dynamically distributing notes only when a Voice is actually playing. You can also use this parameter in conjunction with the DX Polyphony menu to manually fix the polyphony of some Voices and leave the rest to be distributed by DVA.

However, there are times when DVA isn't the best choice in setting the DX's polyphony. Here are a few suggestions on when to use DVA and when not to:

• When to use DVA
Use DVA when you plan on playing Voices A thru H in the Octal mode, but not all at once. One such occasion might be in a Song created in SE!quencer - there may be times when only Voices A or B are playing, and others when only Voice C or D plays. If you use DVA, all the Voices will have the maximum polyphony possible.

• When not to use DVA
If you use DVA in a situation where many DX Voices are playing at the same time, notes will be stolen with an audible "popping" sound. The best thing to do in this case is to set the DX's polyphony manually.

• When to use DVA with manually set polyphony
There may be times when you play one Voice all of the time and the rest just once in a while. In this case, you

can set the polyphony of one Voice manually and leave the rest up to DVA. For example, if you manually set 6 notes of polyphony to Voice A, that will leave 10 notes for DVA to distribute to your other DX Voices.

2

>Clock out

off

This parameter will turn on ENGINE's MIDI Clock OUT, which will send a MIDI clock number (tempo) to any external MIDI drum machine or sequencer. Use this parameter to keep your other MIDI devices in sync with Player and SE!quencer.

3

>Chord Hold

on

If you are in the Chords or Player Performance mode, you can use this parameter to hold the chord or PlayerSong without having to keep your finger on the key.

4

>MIDI in

direct

With E!, MIDI data can be received by the DX in one of two modes; Normal mode and Direct mode. Of the two modes, Normal mode is most like the DX7II's original MIDI implementation. Each mode has specific strengths (and weaknesses), so studying the following descriptions should help you to choose the one that best fits your needs for each performance.

In Normal mode, all data entering the DX's MIDI IN port will be processed as though it was played on the DX7 keyboard itself. This closely resembles the DX's original MIDI implementation with the exception that the DX's Split Voice mode no longer supports the input of MIDI data on 2 separate channels. Instead, E! gives you enhanced MIDI input on a number of different channels, using the Direct mode.

The Direct mode allows you to tap the full power of the polytimbral E!quipped DX7II/DX7s. In this mode, all incoming data is played on the ENGINE Track number that matches the MIDI channel number of the incoming data. For example, data coming in on MIDI Channel 1 is played by ENGINE Track 1, which in turn can be set to play any DX Voice or any MIDI Channel. To ignore a MIDI channel, simply turn that Track Destination OFF. Bulk system data is not allowed in this mode, but you can make parameter changes and "edit buffer" transfers to any of the 8 DX Voices if you are in Octal mode.

```
>EG forced damp
     off
```
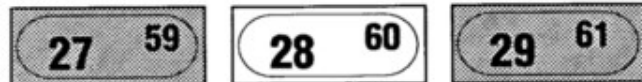
```
>Performance name
                    Demo Song 1
```

These two menus remain exactly as they were before E! Please refer to your Yamaha DX7II/DX7s owner's manual for more information.

Octal mode

You can play up to 8 DX Voices at a time in the Octal mode, each one having its own Track assignment, adjustable Volume, Transpose value, and Velocity Curve/Level. Just follow the diagrams:

27 **59**	28 **60**	29 **61**

press button 28
to access the
Voice mode
menu

> Voice mode

  octal

-1 /OFF	+1 /ON
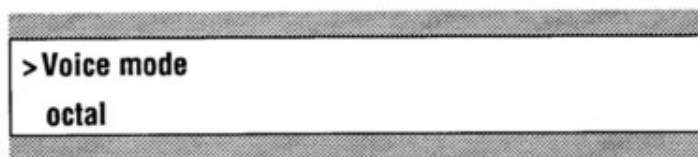
press YES or NO to change
Voice modes and select Octal mode
(the data entry slider will not allow access to Octal mode)

How to select voices on the DX7II

VOICE MODE SELECT

SINGLE	DUAL	SPLIT
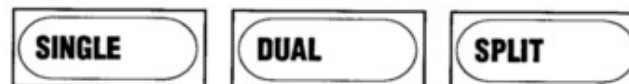
press any one of the <u>Voice mode select</u> buttons

Voice		>A E2-15 PianoBells
Octal	E! bank 2	

A/B
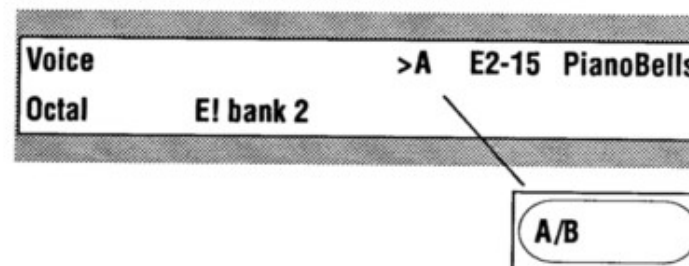
press the "A/B" button
repeatedly to cycle thru DX
Voices A to H

NOTE: there will be a slight delay after
you select a patch number in the
Octal mode

How to select voices on the *DX7s*

FRACTIONAL/MICRO TUNE

◄ KEY SET ►

VOICE   INT/CRT

*press the Voice
button*

```
Voice    Octal  >A
E2-15  PianoBells
```
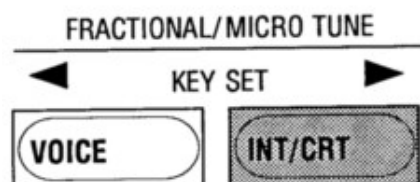
VOICE

*press the Voice button
repeatedly to cycle thru
DX Voices A to H*

*NOTE: there will be a slight delay after
you select a patch number in the
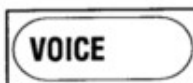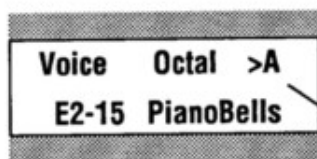Octal mode*

Adjusting Octal mode voices

*Use the ENGINE menus under button 29 to
adjust the Volume, Polyphony, Note shift, and
Tuning of each Octal mode voice.*

27 59   28 60   29 61

DX	>A	>B	>C	>D	>E	>F	>G	>H
Volume	92	128	102	65	128	128	0	128

DX		>A	>B	>C	>D	>E	>F	>G	>H
Polyphony		8	4	2	2	---	---	---	---

NOTE	>A	>B	>C	>D	>E	>F	>G	>H
Shift	0	0	-1	+2	0	-3	0	+4

Micro-	>A	>B	>C	>D	>E	>F	>G	>H
Tuning	on	on	off	off	off	off	on	off

Octal mode and the Track Assign menu

As you know, the Destination of a Track can be any DX Voice or MIDI channel - if your DX is in the Octal mode, the Destination will read "DX A" thru "DX H" instead of just "DX". This means that any Track can be set to play any DX Voice (A thru H.) By using the Track Assign menu, you can also set a separate Transpose and Velocity Curve/Level for each Voice.

Please note that for any Octal mode DX Voice to be audible, you must have at least 2 notes of polyphony per Voice and the volumes of each Voice must be set (see the DX Voice menus under ENGINE button 29.)

TR	>Dest	>Transpose	>Patch	>Curve	>Level
03	DX C	+12	---	POS1	06

Poly-unison and Random pitch

The Poly-unison and Random pitch parameters of your DX are slightly different in the Octal mode (if you are unfamiliar with these two parameters, please refer to your DX7II/DX7s owner's manual for an explanation.) If you select Poly-unison, your total polyphony will be reduced to 8 notes (not 4, as in any other DX Voice mode.) Also, if you use the Random pitch parameter you may notice that its effect will seem richer and more natural sounding than in the other DX Voice modes.

For those who are familiar with Grey Matter's E! for the original DX7, these are otherwise known as the Voice Stacking and Random Detune features.

Octal mode and MIDI input

Of course, you can drive the Octal mode's 8 DX Voices with external keyboards and sequencers through the DX's MIDI IN port. However, there are some special ENGINE features for using MIDI input while the DX is in the Octal mode. See the discussion of the Direct MIDI input mode on page 36.

Panning Octal mode voices on the DX7II

The normal Pan feature is disabled when you are in the Octal mode; however, there is a "pseudo-Pan" available, allowing you to specify which audio channel a DX Voice will be output to. This "pseudo-Pan" is done by the allocation of notes using the DX Polyphony menu.

To activate the "pseudo-Pan", press the PAN button while you are in the Performance mode. Now, when you play, the DX Voices that have been allocated the first 8 notes of polyphony will be voiced by one audio channel, while the Voices that have been allocated the second group of 8 notes will be voiced by the other audio channel. By experimenting with and adjusting the DX Polyphony settings, you can have single or group Voices in true stereo. (For more precise panning, make sure that Dynamic Voice Allocation is OFF)

Performance modes

With E!'s 8 Performance modes, you can realize the potential of ENGINE as a 16 track MIDI event processor - from the Floating Split and 8 Way Split, to the amazing Tonal Processor that makes Chords and Player possible.

NOTE: the Track Assign menu plays an important role in ALL Performance modes. It is advised that you first have a complete understanding of its functions before continuing.

27 59	28 60	29 61
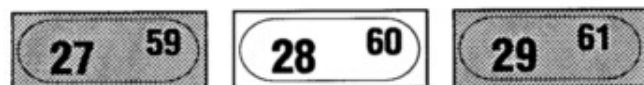
press button 28
until screen
reads

>Perf mode	>Song	>Tempo	>Sync
Player	04	120	INT

---

①	②	③	④

>Perf mode	>Song	>Tempo	>Sync
Player	04	120	INT

①

>Perf mode

Normal 1

Normal1 is the original DX7II/DX7s Performance mode. In this mode, the keyboard responds exactly like a non-E!quipped DX7II/DX7s - with the exception that pressing the Foot Switch (2) will switch the active keyboard Track from Track 1 to Track 2 (see the ENGINE menus under button 27 to set the Foot Switch Select to "ENGINE.") The active keyboard Track will switch back to Track 1 when you let go of the Foot Switch.

Using this mode, you can alternate between any two patches (DX or MIDI) and still have the freedom to play the entire DX keyboard.

>Perf mode

Normal 2

Normal2 mode is exactly the same as Normal1, except that pressing the Foot Switch(2) or the ENGINE button will cycle the active keyboard Track thru all 16 Tracks (as long as they have a Destination - a Track that is OFF will reset the cycle back to Track 1.)

>Perf mode

Track HI

In this mode, all notes are played by Track 1, while the highest current note is also played by Track 2.

>**Perf mode**

FlotSplit

In the Floating Split mode, any notes played by your left hand will voiced on Track 1, while any notes played by your right hand will be voiced by Track 2. This differs from a fixed split because, in this mode, *the split point dynamically moves up and down the keyboard as you play.* Here's how it works:

When playing, E! will constantly monitor the highest current note (sustained notes don't count.) Any notes within a 9 note interval down from the highest note are judged to have been played by your right hand (which will be voiced by Track 2), while any notes below this "soft split" point will be judged to have been played by your left hand (which will be voiced by Track 1.)

>**Perf mode**

8 Way Split

The 8 Way Split mode lets you play up to 8 separate Tracks on the DX keyboard. Please see the discussion of the 8 Way Split Point menu for a full explanation (button 29 ENGINE menus.)

>**Perf mode**

Chords

>**Perf mode**

Player

Both Chords and Player are discussed in separate sections of this chapter.

>**Perf mode**

SE!quencer

Choose the SE!quencer mode when you want to play a Song or when you want to store a Song into a Performance, both of which are explained in the SE!quencer Appendix.

You do not have to set the Performance mode to "SE!quencer" in order to enter the SE!quencer program.

②

de >**Song** >

04

If you are in the Chords, Player, or SE!quencer mode you can use this parameter to choose any one of the 10 Songs for each Performance mode.

③

>**Tempo** >

120

If you are in the Player or SE!quencer mode, the Tempo parameter will be adjustable for each Song. The Tempo range is from 77 to 204 beats per minute.

④

po >**Sync**

INT

If you are in Player or SE!quencer mode, the Sync parameter allows you to choose whether the DX will play at the internally generated tempo (INT), or follow an external MIDI clock for its tempo (EXT). *When Sync is set to EXT, the external MIDI device (drum machine, sequencer etc.) must also provide Start/Stop commands.* Also, the MIDI Clock out parameter (button 29 ENGINE menus) will not function when Sync is set to EXT.

Please note that E! does not support MIDI song position pointer, or MIDI time code.

Special controls for Performance modes

Foot switch	>Select	>A	>B
(64-67)	ENGINE	---	---

If you have the Foot Switch(2) set to ENGINE you can use it as a Start/Stop swicth in Player and SE!quencer modes. It can also be used in Normal1 and Normal2 modes as a Track selct switch.

1►32 33►64
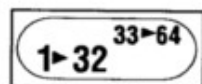
the ENGINE button

If you don't have a Foot Switch, you can use the ENGINE button as a Start/Stop or Track select in the various Performance modes.

How to activate a Performance mode

VOICE MODE SELECT
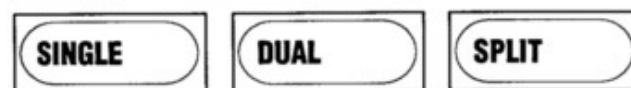
(SINGLE)   (DUAL)   (SPLIT)   **DX7II**

FRACTIONAL/MICRO TUNE

◄   KEY SET   ►

(VOICE)   (INT/CRT)   **DX7s**

press a Voice mode button to exit the Edit mode

PLAY
(PERFORMANCE)

If you press the PERFORMANCE button, the Performance mode that you selected will be active (the LED light must be on for the Performance mode to be active.)

NOTE: if you select a stored Performance, all data in the ENGINE edit buffer will be reset.

the Tonal Processor

27 ⁵⁹	28 ⁶⁰	29
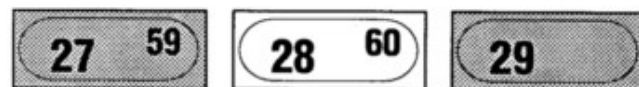
press button 28 repeatedly to cycle thru to the Tonal Processor

① ② ③ ④

>Note	>Key	>Scale	>Pattern
C	C	C	2

You don't have to adjust each note for the Tonal Processor to work - do so only if you want to create complex chord progressions that are difficult to play live

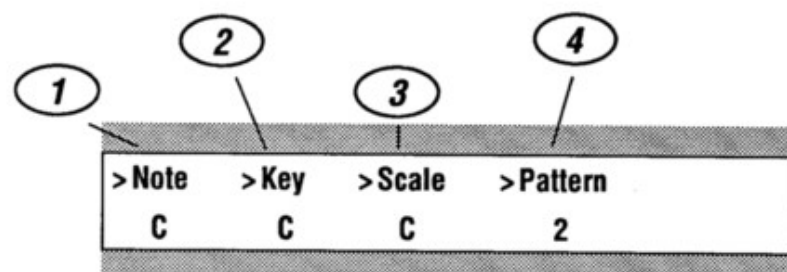ENGINE's Tonal Processor is one of the most exciting Performance features of your E!quipped DX7II/DX7s since it is at the heart of E!'s auto-accompaniment modes: Chords and Player. By using this menu, you can program complex chord progressions in various musical styles - but playing them isn't complex, it's easy! Once you have the Tonal Processor set up exactly as you want it, all you have to do is press 1 key to trigger 16 Track chords.

Tonality is a fundamental, but complex, element of Western music theory. In order to use the Tonal Processor to its fullest capabilities, Grey Matter suggest that you explore some of the readings that are in the Bibliography at the end of this section.
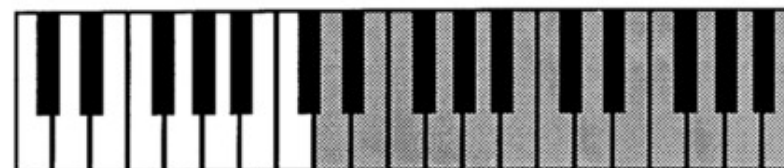
the bottom octave of the keyboard activates the Tonal Processor

The Tonal Processor is active only in the Chords and Player Performance modes. When in these two modes, the bottom octave of the DX's keyboard will be the Tonal Trigger - pressing a key there will "turn it on." Every note in this octave can be adjusted with ENGINE's Tonal Processor menu.

With the Tonal Processor you can selectively take any note and re-define it so that the Chords or Player pattern will play in a different key whenever you trigger that note (you can even assign a different pattern for each note!)

You can pre-program an entire song's chord progressions - complete with breaks! And every Track is also velocity sensitive for even more control over the dynamics of a song! Using the Tonal Processor in the Chords and Player Performance modes gives you both control and spontaneity!

these are some possible settings for the Tonal Processor

this key plays a " C" in the key of C

this key plays an " F# " in the key of F#

these two keys play a " D# " in the key of C
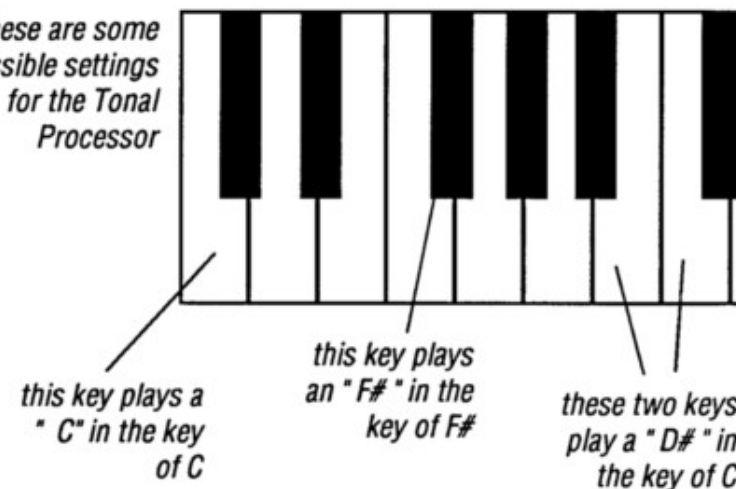
(1)

> Note >

C alt

Use this parameter to adjust each note of the Tonal Processor octave (C1 to C2). Each note can have a separate setting for the three other parameters of this menu (Key, Scale, Pattern).

You can also set up an alternate tonality for each note. *The alternate settings are triggered only when that note is pressed simultaneously with another note that is beneath it.*
For example, if you have C alt set to play Pattern 2 with a D# in the C scale, these settings will not be triggered if you press the C2 note - however, they will be triggered if you press C2 along with any other note beneath it (B, A#, A, etc.)

(2)

> Key >

D #

The Key parameter determines the "accidentals" in the current tonal voicing (key signature). Use this parameter to determine which notes are sharp (and flat).

(3)

> Scale

C

The Scale parameter determines the "mode", or starting note, of the scale that will play in the KEY chosen. For instance, if you have chosen a Key of G, the Scales that are available are G,A,B,C,D,E and F#.

(4)

> Pattern

2

A separate Pattern can be set for each note. The number of Patterns varies per Song and per Performance mode (Chords or Player) - see the Supplemental booklet for a transcription of each Pattern.

>Note	>Key	>Scale	>Pattern
D	D	D	1

Each note can have an alternate setting that is triggered only when you press that note and any other note beneath it simultaneously

>Note	>Key	>Scale	>Pattern
D alt	F	D	2

Note Alternate		Key		Scale		Pattern	
C1	C		C			1	
C#	C#		C#			1	
D	D	F	D		D	1	2

*The "D alt" settings here will trigger only if you press a "D" **AND** any note beneath it (C# or C) at the same time*

---

using Player

> Perf mode	> Song	> Tempo	> Sync
Player	02	120	INT

Player is E!'s other auto-accompaniment mode where you can play arpeggios, ostinato patterns, and complex rhythms by pressing 1 key!

There are 10 PlayerSongs, which can be thought of as different musical "styles" (like Funk, Ballad, or New Age.) Each PlayerSong is made up of several 16 Track Patterns, providing alternative versions of the same "style." PlayerSongs cannot be combined within a Performance, but their Patterns can be combined for almost unlimited variation, making Player an extremely versatile tool in just about every performance/recording situation.

By using the Tonal Processor you can pre-program chord progressions and Pattern breaks - you can even use the Track Assign menu to selectively turn any of the 16 Tracks on or off.

See the E! Supplemental booklet for a description of each PlayerSong and a transcription of every Pattern.

Storing Performances

The ability to store all of the ENGINE parameters into a Performance that can be recalled at any time is one of the most exciting features of your E!quipped DX. It's all programmable - the 16 Track patch maps, the Octal mode, every Performance mode, and even the tempo of a Song can be stored into a single Performance. All you have to do is select a Performance number and E! will instantly set up ENGINE exactly as you had stored it (plus all of the other parameters that made up an original Yamaha Performance - i.e., slider assignments, PAN settings, etc.)

Internally, E! can store up to 128 Performances (organized into 4 banks of 32.) Please note that for a Performance to be recalled correctly, all of its component parts must be intact (i.e., have you erased any SE!quencer Songs or Patterns? is your MIDI set-up the same as it was when you stored the Performance?, etc.) To help you organize, feel free to make photocopies of the four Performance charts in the Supplemental booklet.

Just follow the diagrams on the next page to store a Performance:

enter an active Performance state by pressing the PERFORMANCE button (the LED light must be on)

> **Performance**
>
> **E! Bank 3** **E3-32** **New Performance**

-1/NO	+1/YES

use the data entry buttons to select the E! memory bank

STORE

press and hold the STORE button (Internal memory protect should be off)

> **Performance**
>
> **E! Bank 3 Store data to memory?**
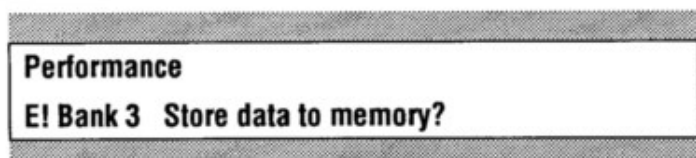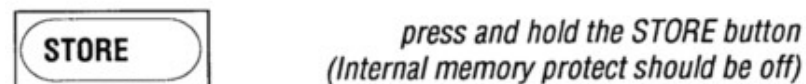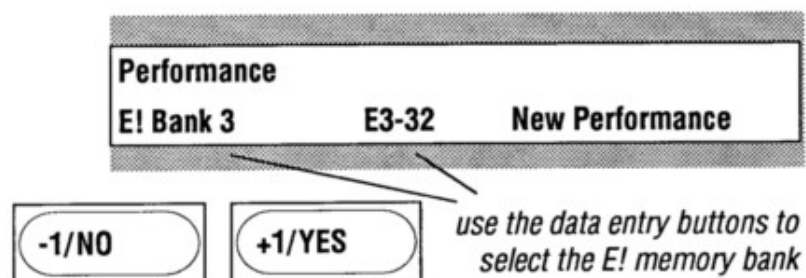
press the number of the location (1-32) where you want this Performance stored

STORE

and

+1/ON
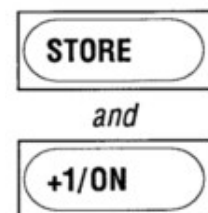
while still holding the STORE button down, press YES and your Performance will be stored

> **Performance**
>
> **** Completed!**
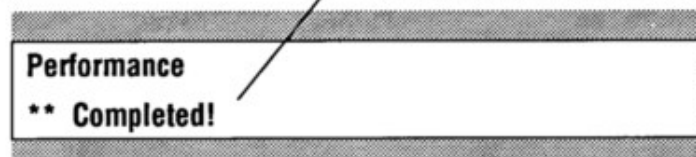
See the Supplemental booklet for some examples using the Performance modes and for the helpful Performance charts

SE!quencer

It's not just a sequencer, it's SE!quencer - your E!quipped DX7II/DX7s really has a built-in, 16 track MIDI recorder! Now you can record entire 16 track Songs right from your keyboard. If this is your first keyboard, SE!quencer is a fantastic way to get the most out of it - using the Octal mode, you can record up to 8 exciting tracks for every Song. If you've already got other MIDI equipment, you can playback SE!quencer's 16 tracks on any MIDI channel. And for those who may already have a dedicated sequencer, you can use your new SE!quencer to quickly write demos, or to work on ideas while you're on the road. You can use SE!quencer at home, on stage, in the studio - anywhere. And it's so easy to use! Just follow the diagrams in the next four chapters and you'll be recording in minutes:

How to enter SE!quencer

press

| EDIT |

UTILITY

TUNE

| **14** **46** |

press button 14 until screen reads

| LOAD PROGRAM   >Voyeur   >SE!quencer   >12 tone |

select SE!quencer and press YES

| +1/ON |

| SE!quencer 1.12 |
| 1=Record 2=Play 3=Edit 4=Util NO=Exit |

"Help" screens display possible choices
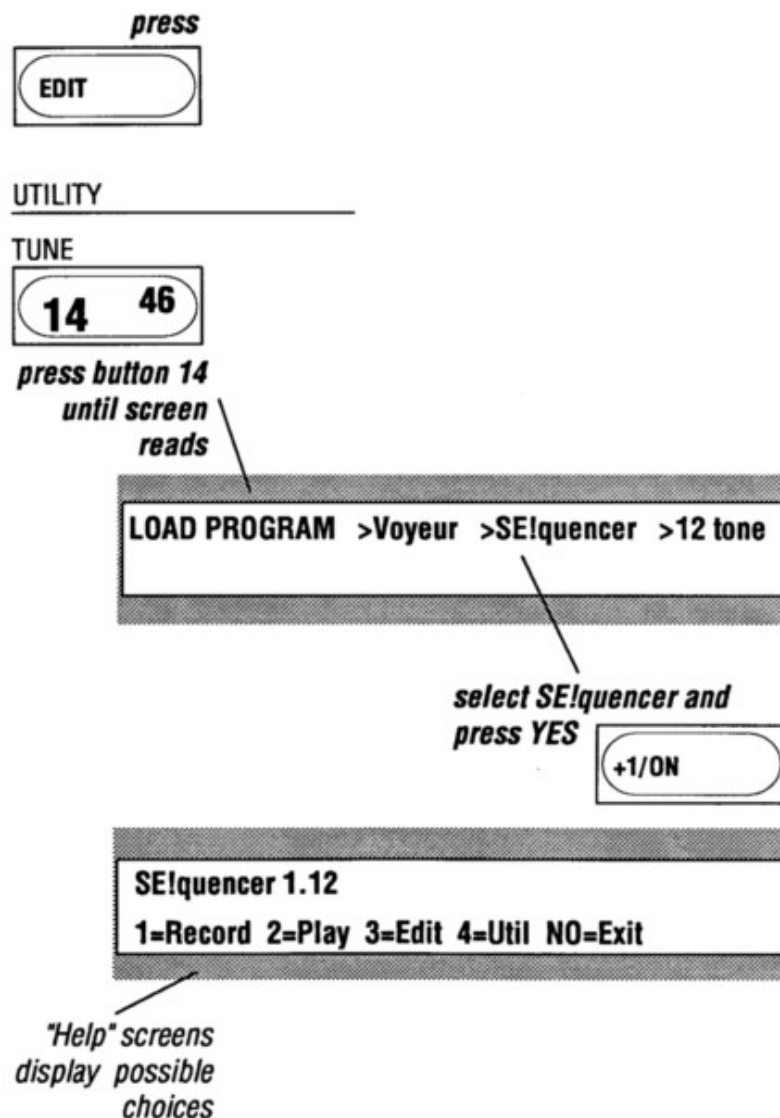
Using SE!quencer on the DX7s

Due to the smaller LCD screen on the DX7s, viewing all of SE!quencer's "Help" messages at the same time is not possible. In order to see all of your choices, press the STORE button repeatedly, like in the example:

DX7II FD/D screen

```
SE!quencer 1.12
1=Record  2=Play  3=Edit  4=Util  NO=Exit
```

DX7s screen

```
SE!quencer 1.12
1=Record
```

press

STORE

```
SE!quencer 1.12
 2=Play
```

press again

STORE

```
SE!quencer 1.12
 3=Edit
```

press again

STORE

```
SE!quencer 1.12
 4=Util
```

press again

STORE

```
SE!quencer 1.12
 NO=Exit
```

FRACTIONAL/ MICRO TUNE

◄ KEY SET ►

`INTERNAL`   `CARTRIDGE`   **Key Set on the DX7II FD/D**

FRACTIONAL/ MICRO TUNE
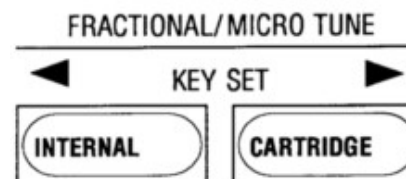
◄ KEY SET ►
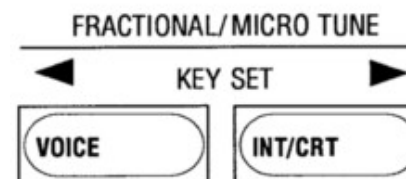
`VOICE`   `INT/CRT`   **Key Set on the DX7s**

SE!quencer and ENGINE settings

Your ENGINE settings are an important part of SE!quencer - what you record in SE!quencer as Tracks 1 thru 16 will be played by whatever instruments (DX or MIDI) the ENGINE Destinations are currently set at. All of ENGINE's parameters for Track Assign (Tranpose, Patch number, and Velocity Curve/Level), and the DX Voice menus (Note Shift, Volumes, Polyphony, etc.) are active when you are in the SE!quencer program. In this way, you can change the Destination of a Track and all other parameters even after you've recorded it. *See the SE!quencer appendix for more information on changing ENGINE settings while in the SE!quencer program.*

Also, please note that only 1 DX Voice mode (Single, Dual, Split, or Octal) can be active for each Pattern or Song. If you record a Pattern in Single, Dual, or Split voice mode, you will not be able to record onto another Track with a different DX Voice unless you change the Voice mode to Octal.

Record mode

Recording with SE!quencer is a very quick and easy process. The basic building block of every SE!quence is the Pattern, which can have up to 16 Tracks. These Patterns are then used to make a Song. Songs are created using SE!quencer's unique Song Record mode that lets you combine any number of Patterns in real-time. Both Songs and Patterns can be stored internally for instant recall whenever you use your DX7II/DX7s. It's really that simple! The next few pages show you how:

```
SE!quencer 1.12
1=Record 2=Play 3=Edit 4=Util NO=Exit
```

```
1        33
```

**press button 1
to enter the
Record mode**

Recording a Pattern

```
Record Mode
1=Song 2=Pattern 3=Tempo NO=Exit
```

**press button 2
to record a
Pattern**

press NO to exit

```
2        34
```

The Pattern is the basic building block of SE!quencer. Internally, SE!quencer can store up to 32 different Patterns at once. The Pattern numbers correspond to the 32 patch select buttons on your DX (Pattern 1= button 1, Pattern 2= button 2, etc.)

A Pattern can have up to 16 separate Tracks, each of which can play up to 16 notes at a time. Each Track can be played by any of the 16 MIDI channels or by the 8 internal DX voices in the Octal mode (all information concerning Track destination, DX volumes, Velocity Processing, etc. are determined by your ENGINE settings. (See the discussion, "Using the Track Assign/Voice mode menus" in the SE!quencer appendix.)

A Pattern can be from 1 to 64 bars long, and can be set to most any time signature you need when you initialize it. (see the next page.) Patterns can also be copied using the Pattern Copy Utility (see the Utility mode chapter.)

To record a Pattern, just follow the examples on the next few pages:

Initializing a Pattern

The first thing you need to do when recording a Pattern is to initialize it with the exact timing and for the length that that you desire (if you've already initialized the Pattern, just press NO to continue on to the Record Pattern menu.)

When you initialize a Pattern, you are really erasing all of the Tracks in that Pattern and placing a metronome based on the timing you set into a special Track known as a "click track." Although independent of the other ENGINE Tracks, the "click track" uses the Track 16 Destination for its sound (so make sure that Track 16 has an active Destination.)

```
INIT Pattern xx?  Sign=yy/y   # Bars
[yn]  KS=Time Sign  <>=BARS  1-32=Pattern
```

press YES to continue initializing Pattern

press NO to abort the Pattern Initialize and continue on to Record Pattern

use the Key Set buttons to adjust the time signature

use the Cursor buttons to set the number of bars

press buttons 1-32 to select Pattern

• Use the Cursor buttons to set the length of the Pattern (a Pattern can be from 1 to 64 bars long.)

• Use the Key Set buttons to set the Pattern's time signature (you can have 1 to 16 beats per measure; the beats can be 1/2, 1/4, 1/8, and 1/16 notes.)

You can also set a lead-in that will play the "click track" for up to 8 beats before recording each Track of the Pattern.

```
Lead=xx beats?
Slider=Beats  No=Exit
```

use the data entry slider to adjust the number of beats

press NO to abort the Pattern Initialize

• Use the data entry slider to set the number of beats for each Pattern's lead-in (the lead-in can have from 0 to 8 beats.)

See the SE!quencer appendix for more information on a Pattern's "click track."

Recording a Pattern

(1) *"TPT": the Pattern status display*

> **Record Pattern? Txx:Pxx:Txxx**
>
> **[yn] 1-32=Pattern KS=Track**

press YES to begin recording (press NO to exit)

press buttons 1-32 to select Pattern

press the Key Set buttons to select Track
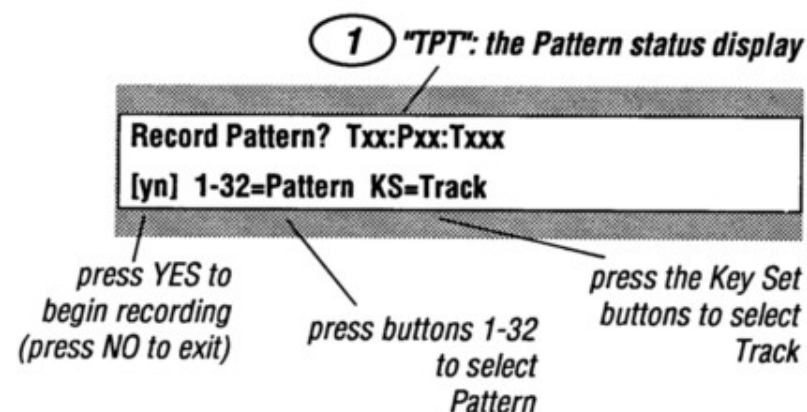
(1)

T*rack xx:* P*attern xx:* T*empo xxx*

use the data entry slider to set the tempo

T06: P21: T110

read as "Track 6 of Pattern 21 at a Tempo of 110 beats per minute."

The Pattern status display shows you everything you need to know while recording a Pattern. Just follow the diagram to select the Track number (1 thru 16) and the Pattern number (1 thru 32). Use the data entry slider to change the tempo (from 77 to 204 beats per minute.)

See the SE!quencer appendix for information about adjusting the ENGINE Track Assign/Voice mode menus.

---

press YES to begin recording

+1/ON

When you press YES, SE!quencer will play the "lead-in" beats that you set before starting to record the Track. *No notes played on the keyboard are recorded during the lead-in.* If you have a MIDI drum machine sync'd to the DX Clock out, SE!quencer will automatically send it a start command to fill the lead-in. (see "MIDI Out sync" in the SE!quencer appendix.)

> **Record Pattern Txx:PxxTxxx**
>
> **NO=Stop**

To record notes in SE!quencer, simply play whatever you want on the DX keyboard. SE!quencer will remember everything you do, including velocity and controller information (pitch bend, after touch, etc.)

press button 1 to preview the new Track

> **Keep this track? 1=Preview**
>
> **[yn] 2=Quantize 3=Erase Lead 4=Strip controllers**

press YES to keep Track (press NO to exit)

press button 3 to erase the lead-in beats

press button 2 to Quantize the new Track

press button 4 to strip controller data from the Track
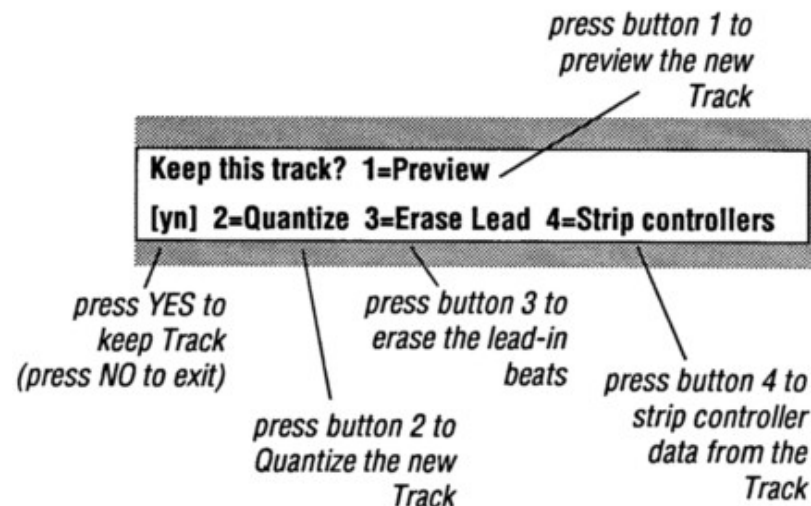
See the next page for an explanation of this menu.

Preview Track

After you record each Track, SE!quencer will let you preview it by pressing button 1. *What you will hear is the newly recorded Track only, not every Track in the Pattern.* If you answer YES, your Track will be compiled with the Pattern and SE!quencer will automatically advance you to the next Track for recording (if you answer NO, SE!quencer will return you to the Record Track menu.) Repeat this process for recording every Track of the Pattern.

Quantize Track

Quantize Track lets you correct the timing of a recorded Track by moving all notes to the nearest beat. However, unlike most other sequencers that will cut some notes off after quantization, SE!quencer's Quantize Track will not affect the duration of any notes. You can adjust the note resolution with the data entry slider (from 1/4 note to 1/32 note.) SE!quencer will let you preview the quantized Track before compiling it into the Pattern.

For example, if you want all notes on a Track to be exact 1/4 notes but some of the notes aren't quite "on beat", you can use Quantize Track to move all of the notes to an exact 1/4 note beat.

Track before Quantize

Track after Quantize (1/4 note resolution)

```
Quant Track xx?  Note=1/xxx
[yn]  SLIDER=Note
```

press YES to quantize selected Track (press NO to exit)

the data entry slider adjusts the Note resolution (from 1/4 note to 1/32 note) Notes followed by a "T" indicate note triplets (1/4T= 1/4 note triplets)
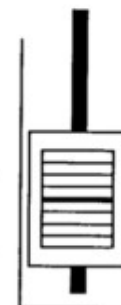
Erase lead-in

If you select the Erase Lead-in parameter, the lead-in that you set for this Pattern will be erased when you compile the Pattern. *Please note that once a lead-in has been erased it cannot be recovered.* Also, please note that this does not affect the Pattern's "click track" in any way.

Strip Controllers

Strip Controllers will strip all controller data from the selected Track when you compile the Pattern. Controller data includes: pitch bend, modulation, after touch, sustain, portamento, and breath control information. When controller data has been stripped from the Track, only key on/off commands (the actual recorded notes) and velocity information will be left.

See "Memory limits of SE!quencer" in the SE!quencer appendix for more information about using controllers when recording a Pattern.

Recording Pattern Tempo

Record Mode

1=Song 2=Pattern 3=Tempo NO=Exit

```
 3     35
```

*press button 3
to Record
Pattern Tempo*

"TPT": the Pattern status display

Record Tempo? Txx:Pxx:Txxx

[yn] 1-32=Pattern Set slider first!

*press YES to
continue
(press NO to exit)*

*press buttons
1-32 to select
Pattern*

You can use the Record Pattern Tempo menu to record an offset value for the tempo of any Pattern. The advantage of recording an offset value rather than a specific tempo is that any tempo changes you make in this menu will be **relative** to the actual tempo that the Pattern is currently playing at.

The "help" screen tells you to **Set slider first!** - meaning that you should put the data entry slider in the middle of its range to avoid any abrupt changes in tempo when you begin to move the slider.

Record Tempo R=2

[yn] Offset=+20 Slider=offset 1,2,3=Range

*use the data entry
slider to record the
Pattern Tempo
offset*
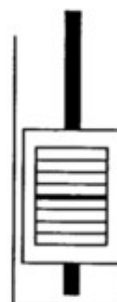
*buttons 1,2, and 3 will let you select
the Range of the Tempo offset:
1=Narrow (+3 to -4)
2=Medium (+15 to -16)
3=Wide (+63 to -64)*

Any changes that you make to the tempo (using the data entry slider) will be recorded along with the Pattern. You can set a static offset value (one that doesn't change) or you can move the slider up and down while you are recording and change the offset live!

When you record a tempo offset for a Pattern, that Pattern will become a **Tempo Key** - any Pattern playing after the Tempo Key will be also be offset with the value that was recorded at the very end of the Tempo Key. The overall tempo of the following Patterns will remain that way until you play **another** Tempo Key, which will reset the offset tempo to a new value.

If you want to revert a Pattern back to its original tempo, there is a Tempo Initialize menu in the Pattern Utilities that will remove all recorded tempo data and return it to its original state.

Recording a Song

```
Record Mode
1=Song  2=Pattern  3=Tempo11  NO=Exit
```

1 **33**

**press button 1
to record a
Song**

press NO to exit

Recording a Song with SE!quencer is even simpler than recording a Pattern - all you really do is play various Patterns in real-time while SE!quencer automatically records them together as a Song. Internally, SE!quencer can store up to 10 different Songs at one time. The Song numbers correspond to the first 10 patch select buttons (Song 1= button 1, Song 2= button 2, . . . Song 10= button 10.)

Any number of the 32 Patterns can be combined to make a Song. A Pattern can also be repeated consecutively within a Song.

While the length of a Pattern is measured in bars, a Song's length is measured in *steps*. **Each Pattern change within a Song is equal to 1 step.** [Repeats of the same Pattern are a little different: up to 7 consecutive repeats of the same Pattern are considered to be 1 step. Any more consecutive repeats than 7 will simply advance the Song another step.] A Song can have a total of 256 steps.

Just follow the diagrams to record a Song:

1 *"SSPR": the Song status display*

```
Record Song?  Sxx:Sxxx:Pxx:Rx
[yn]  1-10=Song
```

*press YES to
continue
(press NO to exit)*

*press buttons 1-10
to choose
Song*

1

Song xx: Step xxx: Pattern xx: Repeats x

S09: S107: P24: R2

*read as "Song 9 has two repeats of
Pattern 24 at step 107."*

The Song status display shows you everything you need to know while you are recording a Song. Only the Song and Pattern numbers can be adjusted - the step value and the number of Pattern repeats change in real-time as you record. Follow the diagrams to select the Song number (1 thru 10) and the Pattern numbers (1 thru 32).

*press YES to
continue*

+1/ON

```
┌─────────────────────────────────────────────────────┐
│ Enter first PATTERN  Sxx:Sxxx:Pxx:Rx                  │
│                                                       │
│ YES =Start  1-32=Pattern  NO=Exit                     │
└─────────────────────────────────────────────────────┘
```

press YES to   *press buttons*
begin recording   *1-32 to select*
Song   *Pattern*

┌──────────────┐
│ +1/ON   │
└──────────────┘

```
┌─────────────────────────────────────────────────────┐
│ Record Song  Sxx:Sxxx:Pxx:Rx      yy  is next         │
│                                                       │
│ 1-32=Pattern  NO=Stop                                 │
└─────────────────────────────────────────────────────┘
```

press buttons
1-32 to choose
next Pattern

Use the Song chart in the
Supplemental booklet as an aid in organizing
your Songs and Patterns

As SE!quencer is recording the first Pattern of the Song, you can choose the next Pattern to be recorded by simply pressing the Pattern number button. If you want a Pattern to be repeated a number of times, just do nothing and the "SSPR" display will show you the number of repeats (after 7 consecutive repeats, the step number will advance and the repeat number will start again at 0.)

If you want your Song to have a lead-in, you must start with a Pattern that still has its lead-in beats intact.

┌──────────────┐
│ -1/OFF   │
└──────────────┘

Press NO at any time to stop recording the Song.

Play mode

Once you have a Pattern or Song recorded, you can play them back at any time while you are in SE!quencer. You can even play groups of Patterns together for any length of time without a break or delay between them, making SE!quencer even more versatile during a live performance.
The diagrams will show you how:

```
SE!quencer 1.12
1=Record  2=Play  3=Edit  4=Util  NO=Exit
```

```
  2    34
```

**press button 2
to enter the
Play mode**

use the data entry slider to adjust tempo when in the Play mode

Playing a Pattern

```
Playback Mode
1=Song  2=Pattern  NO=Exit
```

press NO to exit

```
  2    34
```

**press button 2
to play a
Pattern**

```
Play Pattern xx?
[yn]  1-32=Pattern
```

*press YES to
begin playing
(press NO to exit)*

*press buttons
1-32 to select
Pattern*

When you play a Pattern, the "click track" will be played along with whatever you recorded. However, once you no longer need the "click track" for timing you can mute it by using one of the special Play mode control buttons (discussed at the end of this chapter.) The lead-in will not be muted, and can only be removed by using the "Erase lead-in" parameter after recording a Track.

"TPT": the Pattern status display

```
Play  Txx:Pxx:Txxx        yy is next
KS=Track  1-32=Pattern  NO=Stop         Solo off
```

*press the Key
Set buttons to
select Track*

*press buttons
1-32 to select
next Pattern*
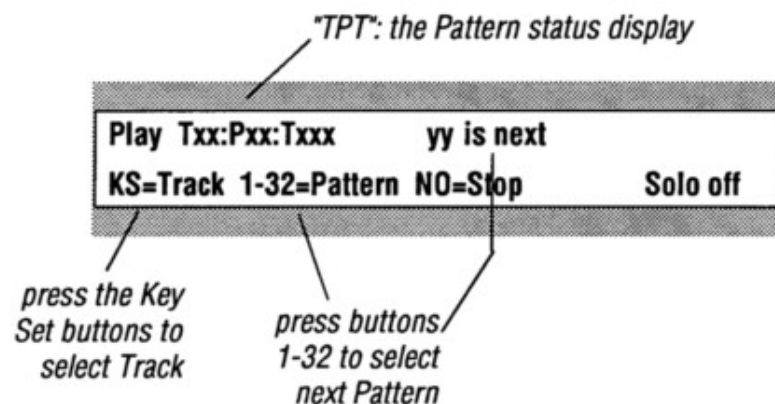
In the Play mode, a Pattern continuously loops itself until
you press NO to stop, or until you select another Pattern.
The LCD screen will display the next selected Pattern.
You can play any of the 32 Patterns, in any order, for any
amount of time.

Playing a Song

```
Playback Mode
1=Song  2=Pattern  NO=Exit
```

```
1        33
```

press NO to exit

**press button 1
to play a Song**

```
Play Song xx?  Sxx:Sxxx:Pxx:Rxx
[yn]  1-10=Song
```

*press YES to
begin playing
(press NO to exit)*

*press buttons
1-10 to select
Song*
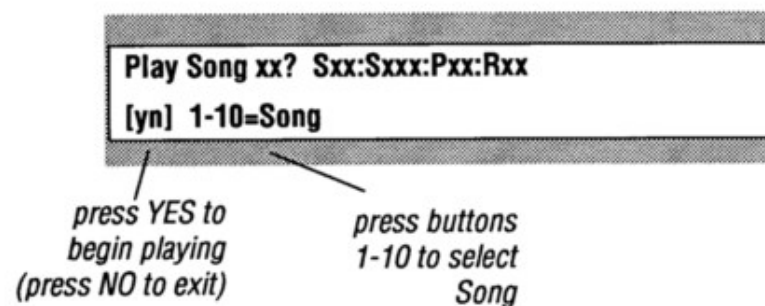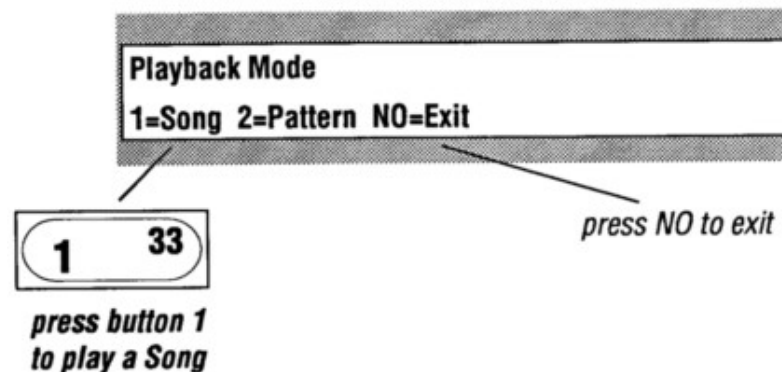
"SSPR": the Song status display

```
Play  Sxx:Sxxx:Pxx:Rx
NO=Stop
```

*press NO to
stop playing*

Unlike a Pattern, a Song will not loop itself. The LCD screen displays the "SSPR" of the current Song you are playing.

Please note that for a Song to be played back correctly, the Patterns that were used to create it must not have been altered by mistake and they must also be in SE!quencer's memory. Photocopy the Song chart in the Supplemental booklet and use it to organize your Songs.

Special Play mode controls

these features are also active in the Record mode

○

PLAY

PERFORMANCE

The PERFORMANCE button can be used to mute the "click track"

1▸32 ³³▸⁶⁴
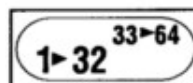
When you are playing a Pattern, this button will mute all Tracks except the one that is currently showing on the "TPT" display (the LCD screen will read **Solo**) Use the Key Set buttons to change the Solo Track.

For more information, see "Live performance with SE!quencer" in the SE!quencer appendix

Edit mode

Patterns and Songs can be modified in part or even created in whole in the Edit mode. The Edit mode is like the Record mode in that notes that you play on the keyboard are recorded for later playback. However, SE!quencer's "clock" does not move forward by itself to progress you through the Pattern or Song while recording. In this mode, **you** advance the clock manually for extremely accurate placement of notes in a Pattern or to insert/delete steps within a Song. The next few pages show you how:

```
SE!quencer 1.12
1=Record  2=Play  3=Edit  4=Util  NO=Exit
```

3   **35**

press button 3 to enter the Edit mode

Editing a Pattern

```
Edit Mode
1=Song  2=Pattern  NO=Exit
```

2   **34**

press button 2 to edit a Pattern

```
Edit Pattern mode. . .   1=Event Edit
2=Step Record  NO=exit
```
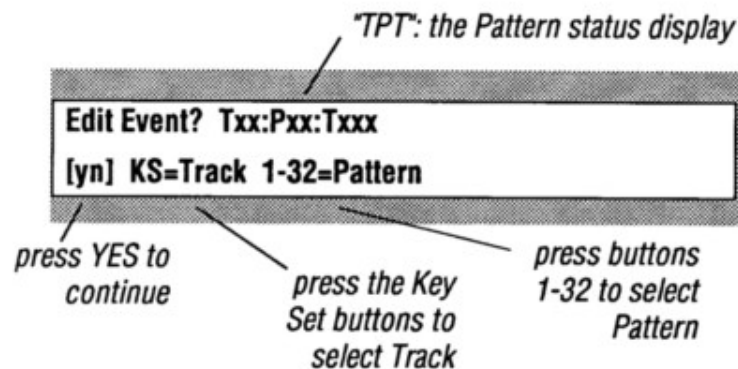
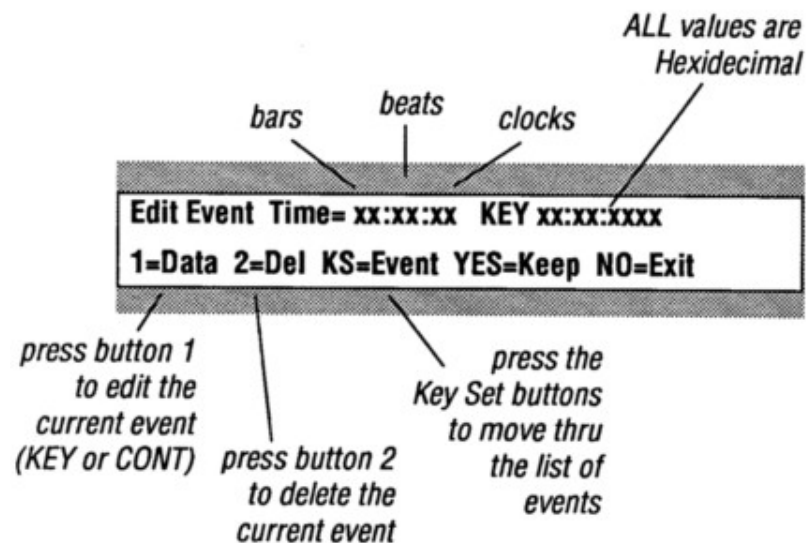**press button 2 to Step record a Pattern**

press button 1 to edit single events within a Pattern

With the two Edit Pattern modes you can slowly advance SE!quencer through a Pattern, making it easy to record parts that might be extremely precise (even impossible for you to play at full speed), or to selectively pick out individual notes and edit specific information.

Event editing a Track

"TPT": the Pattern status display

```
Edit Event?  Txx:Pxx:Txxx

[yn]  KS=Track  1-32=Pattern
```

press YES to continue

press the Key Set buttons to select Track

press buttons 1-32 to select Pattern

You can use this menu to edit individual events on each Track of a Pattern. Just use the Key Set buttons to advance you thru each event and then press button 1 to actually edit a specific type of data (Key on/offs and Controllers.)

ALL values are Hexidecimal

bars *beats* *clocks*

```
Edit Event  Time= xx:xx:xx   KEY xx:xx:xxxx

1=Data  2=Del  KS=Event  YES=Keep  NO=Exit
```

press button 1 to edit the current event (KEY or CONT)

press button 2 to delete the current event

press the Key Set buttons to move thru the list of events

Editing a KEY event

buttons 1-4 let you adjust specifc types of data

```
KEY xx:xx:xxx  1=Note 2=Vel 3=Durc 4=Durf

Slider=Key  NO=Exit
```

coarse   *fine*

(Duration)

Editing a CONTroller event

buttons 1 and 2 let you adjust specific types of data

```
CONT xx:xx  1=Cont  2=Value

 Slider=Cont  NO=Exit
```
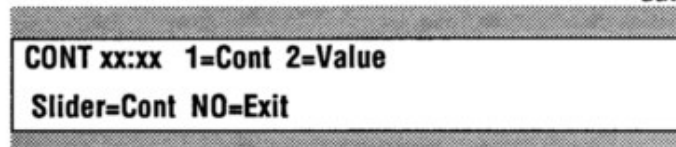
AT=After touch
MC=MIDI controller
MW=Mod wheel
BC=Breath controller
FT=Foot controller
PT=Portamento time
DS=Data slider
MV=MIDI volume
C1=CS1
C2=CS2
F1=FC1
SP=Sustain pedal
PP=Portamento pedal
KH=Key hold
SF=Soft pedal
FS=FS2
PB=Pitch bend

Step Recording a Pattern

"TPT": the Pattern status display

```
Step Record?  Txx:Pxx:Txxx

[yn]  KS=Track  1-32=Pattern
```

press YES to continue *press the Key Set buttons to select Track* *press buttons 1-32 to select Pattern*

1 *the Edit Pattern Time display*

```
Step Record  Time=xx:xx:xx  Note=1/xxx
Left    Right
�=Clock  ◄=Step  Slider=Note NO=Exit
```

KeySet

button S advances the clock by one "tick"   *button ◄ advances the clock by "note" increments*

the data entry slider adjusts the Note increment value (from 1/4 note to 1/32 note) Notes followed by a "T" indicate note triplets (1/4T= 1/4 note triplets)

1 **Time = xx: xx: xx**

    bar   beat   clock

The Edit Pattern Time display shows you exactly where you are within the Pattern when you Step Record. Pressing the Key Set buttons will advance you to any point in the Pattern where you can record a note with amazing precision.

• Pressing the LEFT Key Set button will advance SE!quencer by one "tick" of the clock. A "tick" of the clock is the smallest timing measure in SE!quencer (exactly 1/24 of a quarter note.)

• Pressing the RIGHT Key Set button will advance SE!quencer by a "note". For example, if SE!quencer is set for 1/4 note increments (using the data entry slider), pressing the RIGHT Key Set button will advance the Pattern by 1/4 note.

As you advance through the Pattern, notes that are played on the keyboard will be recorded into the Pattern at the time indicated on the screen. For example, assume you have a Pattern in 4/4 time. If you want to record a legato 1/4 note on the second beat of the first bar, you simply advance the clock until **TIME=01:02:01** At this point, just play the desired note and hold it down while advancing the clock until **TIME=01:03:01** Release the key and it's done.

NOTE 1: when you Step Record a Track, ALL previously recorded notes on that Track will be erased.

NOTE 2: SE!quencer will not record any controller data while in Step Record mode.

Editing a Song

Edit Mode
1=Song 2=Pattern NO=Exit

(1   33)

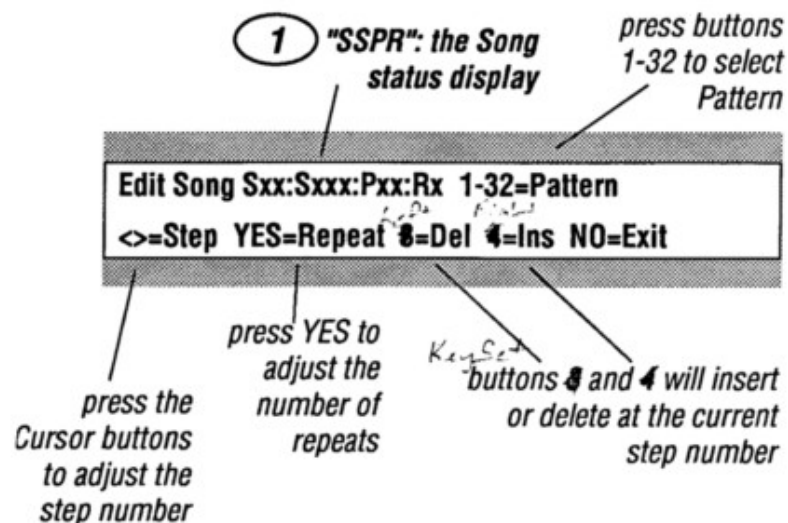**press button 1
to edit a Song**

After you've recorded a Song, you can make minor alterations to it in the Edit Song mode (you can even use Edit Song to create a new Song from scratch.) It is important to remember that SE!quencer will not "play" while you are editing a Song. Instead, you will simply look at the Patterns and steps that make up a Song and adjust them one step at a time.

"SSPR": the Song staus display

Edit Song? Sxx:Sxxx:Pxx:Rx
[yn] 1-10=Song

*press YES to edit
Song
(press NO to exit)*

*press buttons
1-10 to select
Song*

(1) *"SSPR": the Song
status display*

*press buttons
1-32 to select
Pattern*

Edit Song Sxx:Sxxx:Pxx:Rx 1-32=Pattern
<>=Step YES=Repeat 8=Del 4=Ins NO=Exit

*press the
Cursor buttons
to adjust the
step number*

*press YES to
adjust the
number of
repeats*

KeySet

*buttons 8 and 4 will insert
or delete at the current
step number*

(1)

Song xx: Step xxx: Pattern xx: Repeats xx

The familiar "SSPR" display shows you exactly where you are within a Song. With Edit Song, you can quickly change the Pattern number at any step, or insert/delete a step within the Song. Follow the diagram to choose the step number, the Pattern number, and the number of repeats.

• Pressing **the LEFT Key Set button will insert a new step at the current step position.** All later steps will be "pushed back" to make room for this new step.

• Pressing **the RIGHT Key Set button will delete the current step.** All later steps will be "moved ahead" to fill the place left by the deleted step.

Utility mode

SE!quencer's final mode is the Utility mode,
where you will find utilities for erasing Songs,
initializing or copying Patterns, and modifying
Tracks by quantizing note, stripping
controller data from them, or copying them
with an offset value.

```
SE!quencer 1.12
1=Record  2=Play  3=Edit  4=Util  NO=Exit
```

(**4**   **36**)

***press button 4
to enter the
Utility mode***

```
Util Mode
1=Song 2=Pattern  3=Track  4=Global NO=Exit
```

***press button 1
to select the
Song Utilities***

```
Song Util Mode
1=Init  NO=Exit
```

***press button 1
to select the
Song Init   The Song Initialize Utility will erase the selected Song.
utility***

```
Init Song xx?
[yn]  1-10=Song
```

***press YES to   press buttons 1-10 to
erase Song   select Song
(press NO to exit)***

Pattern Utilities

```
Util Mode
1=Song  2=Pattern  3=Track  4=Global NO=Exit
```

press button 2 to select
Pattern Utilities

Pattern Initialize

```
Pattern Util Mode
1=Init  2=Copy  3=Tempo Init  NO=Exit
```

press button 1
to select   One of the Pattern Utilities is Pattern Initialize, which is
Pattern Initialize fully discussed in the <u>Record Pattern</u> chapter.

Pattern Copy

```
Pattern Util Mode
1=Init  2=Copy  NO=Exit
```

press button 2 to select
Pattern Copy

```
Copy Pattern xx?
[yn]  1-32=Pattern
```

press YES to   *press buttons 1-32 to*
continue   *select Pattern "xx"*
(press NO to exit)

```
Copy Pattern xx to Pattern yy?
[yn]  1-32=Pattern
```

press YES to   *press buttons 1-32 to*
copy Pattern   *select Pattern "yy"*
(press NO to exit)

Tempo Initialize

```
Pattern Util Mode
1=Init  2=Copy  3=Tempo Init  NO=Exit
```

press button 3
to select   Another Pattern Utility is Tempo Initialize, which will
Tempo Initialize remove any recorded tempo offset values.

Track Utilities

```
Util Mode
1=Song  2=Pattern  3=Track  4=Global  NO=Exit
```

press button 3
to select the
Track Utilities

Track Inititialize

```
Track Util Mode  1=Init  2=Quantize
3=Strip Controllers  4=Copy  NO=Exit
```

press button 1
to select Track
Initialize

"TPT": the Pattern status display

```
Init Track?  Txx:Pxx:Txxx
[yn]  KS=Track  1-32=Pattern
```

press YES to
erase Track
(press NO to exit)

press the Key Set
buttons to select
Track

press buttons
1-32 to select
Pattern

Quantize Track

```
Track Util Mode  1=Init  2=Quantize
3=Strip Controllers  4=Copy  NO=Exit
```

press button 2
to select the   Quantize Track is fully explained in the Record Pattern
Quantize Track   chapter.
Utility

Strip Controllers

```
Track Util Mode  1=Init  2=Quantize
3=Strip Controllers  4=Copy  NO=Exit
```

press button 3 to
select the Strip   The Strip Controllers Utility is fully explained in the
Controllers   Record Pattern chapter.
Utility

Track Copy

```
Track Util Mode  1=Init  2=Quantize
3=Strip Controllers  4=Copy  NO=Exit
```

*press button 4
to select the
Track Copy
Utility*

The Track Copy Utility will let you copy any Track of the
Pattern that you have just been recording or playing back.
You can even offset the new track so that it precedes or
follows the original track.

```
Copy Track xx?
[yn]  KS=Track
```

*press YES to
continue
(press NO to exit)*

*press the Key Set buttons
to select Track "xx"*

```
Copy Track xx to Track yy?
[yn]  KS=Track  Offset=-24
```

*press YES to
copy Track
(press NO to exit)*

*use the data entry
slider to adjust the
Clock Offset*

*press the Key Set
buttons to select
Track "yy"*

When you offset the new Track, you are really moving it
to a slightly different time in the Pattern - before or after
the original Track. In this way, you can use the Track
Copy Utility to create special effects like a "pre-echo", or
a subtle delay, or even a canon that is exactly in time
with the Pattern.

The Clock Offest range is from 64 Clocks before the
original Track (-64), to 63 clocks after the original Track
(+63). Each clock is equal to 1/24 of a quarter note (24
clocks=1/4 note, 12 clocks=1/8 note, 6 clocks=1/16 note,
3 clocks=1/32 note)

An Offset value of 00 will put the new Track at the same
time as the original Track.

Global Utilities

Util Mode

1=Song 2=Pattern 3=Track 4=Global NO=Exit

*press button 4
to select the
Global Utilities*

There is only one Global Utility - the Global Initialize,
which will erase ALL Patterns and Songs currently in
SE!quencer. SE!quencer will warn you before actually
erasing the data.

Util Global

1=Erase SEQS NO=Exit

*press button 1
to erase ALL
SE!quencer data
(press NO to exit)*

*Now that you've read all about SE!quencer's
four modes - Record, Play, Edit, and the Utilities
- you should read the SE!quencer appendix for
more information on special topics like storing
Patterns and Songs to disk, playing along with
SE!quencer live, and MIDI sync with other
sequencers and drum machines.*

SE!quencer appendix

Adjusting ENGINE menus

Adjusting the ENGINE menus - such as Track Assign, Voice Mode, DX Volumes, and all others discussed in the ENGINE chapters - can be done at any time without having to exit the SE!quencer program. Simply press the EDIT button and the main ENGINE menu, Track Assign, will appear. From here you can go to any ENGINE menu and change the settings. To return to SE!quencer, just press the EDIT button again and you're back where you left off.

Please note that you will not be able to change the Performance Mode menu or store/activate Performances when you adjust ENGINE settings while still in SE!quencer.

EDIT

press EDIT to adjust the ENGINE menus

TR	>Dest	>Transpose	>Patch	>Curve	>Level
09	MIDI 06	+12	51	POS 1	06

EDIT

press EDIT again toreturn to SE!quencer

Storing Songs into Performances

You can store the location of any one of the 10 SE!quencer Songs into any one of the 128 Performances. This means that every time you select a Performance with a Song in it, E! will automatically call up the Song along with the rest of the ENGINE settings.

To store a SE!quencer Song as part of a Performance, just go to the ENGINE Performance mode menu and select the SE!quencer mode. Then select which of the 10 Songs you want and set the Tempo and Sync. Now follow the procedure that is described in the Storing Performances chapter of ENGINE.

>Perf mode	>Song	>Tempo	>Sync
SE!quencer	07	190	INT

Live performance with SE!quencer

There are two methods of playing SE!quencer Songs and Patterns in a live performance situation: within the SE!quencer program, or in the 128 programmable Performances (Songs only.)

• Playing within the SE!quencer program

As you know, you can play any one of the 32 Patterns or 10 Songs while in the Play mode of the SE!quencer program. This allows for almost limitless combinations of Patterns or Songs for any length of time (see the Play mode chapter for more information.) If the Foot Switch (2) is set to ENGINE mode, pressing it will start/stop the Pattern or Song. Also, you can play along with SE!quencer - all notes played live on the DX keyboard will be voiced by the Track 1 Destination.

1▸32 ³³▸⁶⁴
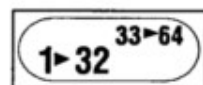
the ENGINE button

• Playing a Song stored in a Performance

If you select a Performance with a SE!quencer Song stored in it, E! will send out a 16 Track Patch Map to set up both your DX Voices and MIDI voices (according to the ENGINE settings that you stored) and then call up the Song from SE!quencer. There are two ways to start/stop the Song: either press the ENGINE button, or press the Foot Switch(2) if it is set to ENGINE mode.

You can also play along with the Song - all notes played on the DX keyboard live will be voiced by the Track 1 Destination.

The "click track"

SE!quencer's "click track" is used to provide timing when you record a Pattern. A different timing can be set for each Pattern when you initialize it - SE!quencer automatically records a special "click track" that is independent of the other 16 Tracks. However, the sound of the "click track" is taken from the Track 16 Destination. When you record a Pattern, the "click" will sound ONLY if you have an active Destination set for Track 16, and if the Destination itself can sound (i.e. check volume levels, polyphony settings, etc.)

○

PLAY

PERFORMANCE

When you play back a Song or Pattern in the SE!quencer program, you can mute the "click track" by pressing the PERFORMANCE button (pressing the PERFORMANCE button again will bring the "click track" back.) The LED light will still flash as a tempo indicator. The lead-in can be removed from a Pattern any time after you record a Track - once the lead-in is removed it cannot recalled unless you re-initialize the Pattern.

When you play a Song in the Performance mode, the "click track" will not sound, but the LED light will flash as a tempo indicator.

MIDI In/Out sync

• MIDI In sync

To sync SE!quencer to an external MIDI instrument that transmits a MIDI clock (such as a drum machine or another sequencer), set the Sync parameter on the ENGINE Performance mode menu to "EXT." *SE!quencer will then depend on an external instrument for timing and start/stop commands.*

• MIDI Out sync

In order for SE!quencer to sync to an external MIDI instrument that accepts MIDI clock data, you must set the Sync parameter on the ENGINE Performance mode menu to "INT" and the ENGINE Clock Out parameter must also be turned ON. Now when you start to record or play in SE!quencer, E! will transmit MIDI clock data for timing and to start/stop your external instrument(s).

Memory limits in SE!quencer

Information that is recorded into SE!quencer is stored in terms of events. An event is everything from a key on/key off command, to velocity, after touch, and pitch bend data. The maximum number of events that SE!quencer can store in internal memory is 22,000 (storing to disk is discussed on the next page.) Although this is quite a substantial amount, there may come a time when you simply run out (the LCD screen will alert you to this by displaying "Problem . . . RAM full!")

One piece of advice on conserving memory is to limit the use of controllers when recording - controller data is notorious for using up events in large quantities (you can also use the Strip Controllers Utility to strip away any controller data per Track.) However, don't abandon the use of controllers just to save memory; that would be boring.

Storing Songs and Patterns to disk

On the DX7IIFD

If you are an owner of a DX7IIFD, you can use the disk drive to increase SE!quencer's internal memory limit to 220,000 events - that's 22,000 events per Song!!! You can store up to 10 Songs per disk, each Song using up to 32 separate Patterns; by using just a few disks you'll be able to store *hours* of SE!quencer Songs.

To store a Song and its component Patterns to the internal disk drive, you must exit the SE!quencer program and go to the DISK menus under button 16. If your disk has been formatted already, press button 16 until the screen says **Disk SE!**

```
Disk SE!  >Dir  >Save  >Load  >Del  >Rename
File 3            x . . . . . . . . . . . . . . . .    [yes]
```

(1) Under the Directory, choose from File 1 to File 10 - these File numbers correspond to Song numbers (File 1=Song 1, File 2=Song 2, etc.)

WARNING:

loading a Song from disk will erase ALL other SE!quencer data currently in the system (all Songs and Patterns)

(2) Name EVERY File that is holding a Song "x" - any other name than "x" will make it impossible to retrieve the Song.

(3) Press YES and your Song and the Patterns used to make it will be stored under the corresponding File number. Now, when you select that SE!quencer Song number in the Performance mode, E! will call up its File number from the disk and load it into memory.

On the DX7IID and DX7s

Songs and Patterns can be transmitted to a computer or another E!quipped DX7II/DX7s over MIDI by using the special **Transmit SE!** menu under the MIDI 2 menus (button 32.) When you transmit SE!quencer data, you will be sending the entire state of SE!quencer - all 10 Songs and 32 Patterns, with a total of 22,000 events per grouping. Please note that downloading SE!quencer data over MIDI is a slow process - expect it to take at least 1 minute.

Transferring data into SE!quencer

Step 1: Prepare the external sequencer to play

In order for SE!quencer to accurately record your Tracks, you should make sure that the following conditions are true:

[A] The sequencer's MIDI Clock out should be "ON" - this allows SE!quencer to accurately record timing data.
[B] All other types of timing data should be "OFF" - this includes Song position pointer, MIDI time code, etc.
[C] Set the tempo control to "SLOW" While normally not needed, this step insures that the DX can accurately process all incoming data.

Step 2: Prepare SE!quencer to Record

[A] Choose a Pattern number to record and initialize it to the exact number of bars needed to record the Pattern.
[B] Set SYNC mode to "EXT" - this tells SE!quencer to "follow" the other sequencer.
[C] Set the ENGINE MIDI IN mode to "NORMAL" - this tells the DX to record data coming into the correct channel.
[D] Set the proper MIDI IN channel (button 31) - this tells the DX which channel to look at for incoming data. Also turn OMNI "OFF".
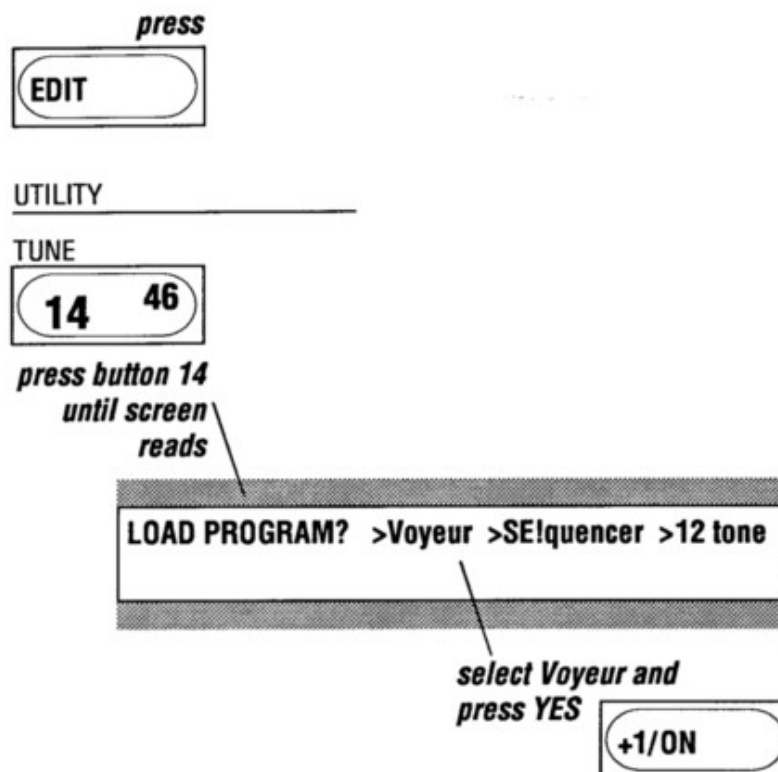
Step 3: Record the Pattern

Each time you record, send one Track from the other sequencer to the MIDI channel that the DX is set to receive on. After 16 passes (you record each Track separately), the Pattern will be playable directly on SE!quencer.
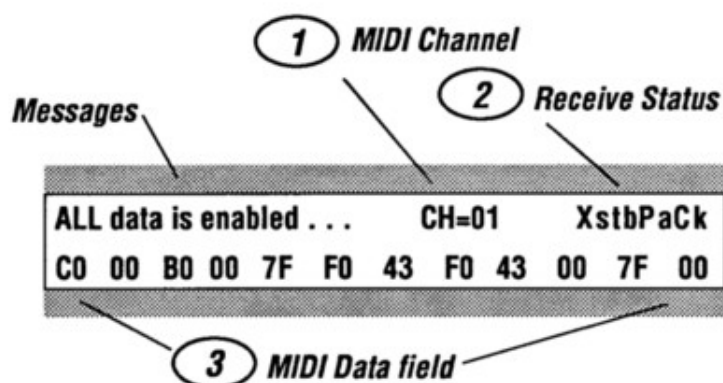
Voyeur the MIDI monitor

Voyeur is a MIDI monitor program that displays all incoming MIDI data right on the DX7II screen. Voyeur allows you to selectively filter certain types of MIDI data on each individual channel, or on all channels using the OMNI mode. This program is particularly helpful if you are working with many instruments in a large MIDI system or if you just want to see how MIDI works. Voyeur has been included in E! for those who are already familiar with the more technical aspects of MIDI; if you are interested in learning about MIDI, Grey Matter recommend that you read the MIDI 1.0 Detailed Specification document or any other MIDI tutorial.

How to enter Voyeur

press

(EDIT)

UTILITY

TUNE

(**14**   **46**)

press button 14 until screen reads

LOAD PROGRAM?   >Voyeur >SE!quencer >12 tone

select Voyeur and press YES

(+1/ON)

Messages   (1) **MIDI Channel**

(2) **Receive Status**

```
ALL data is enabled . . .      CH=01      XstbPaCk

CO  00  B0  00  7F  F0  43  F0  43  00  7F  00
```

(3) **MIDI Data field**

X = System Exclusive   [button 25]

S = Active Sensing   [button 26]

T = Timing data (MIDI clock, etc.)   [button 27]

B = Pitch Bend   [button 28]

P = Patch changes   [button 29]

A = After Touch   [button 30]

C = Controllers   [button 31]

K = Keys   [button 32]

XstbPaCk

Voyeur **has not yet received** After Touch data

XstbPACk

Voyeur **has received** After Touch data

XstbP Ck

After Touch has been **disabled** (turned OFF)

(1) **MIDI Channel** This displays which MIDI channel Voyeur is receiving. To change channels, just select buttons 1-16 (button 1 = MIDI channel 1, button 2 = MIDI channel 2, etc.) Button 17 will allow Voyeur to receive in OMNI mode.

(2) **Receive Status** Each letter in this display corresponds to a different type of MIDI data that Voyeur receives. When Voyeur has not yet received certain data, their letters will be lower-case (example: x, s, t, etc.) When Voyeur has received certain data, their letters will be upper-case (example: X, S, T, etc.) Buttons 25-32 will allow you to filter out each type of data (press the button to turn data ON/OFF) - an empty space on the screen means that type of data has been turned OFF.

(3) **MIDI Data** This is the actual MIDI data stream that is passing through the DX7II. Button 18 will freeze the screen so you can examine the data closely. Please refer to the MIDI 1.0 Detailed Specification Document, or to any other MIDI tutorial on how to interpret this data.

-1/OFF

press NO to exit Voyeur

Expanded Micro Tuning

Along with expanded memory for Voices and Performances, E! has an expanded memory for up to 32 separate 12 tone microtunings. In addition to extra storage, there is E!'s exclusive 12 tone Scale Compiler, which lets you create a global scale much faster than by individually adjusting notes. Just follow the diagrams on the next few pages:

If you are unfamiliar with your DX's Micro Tuning system, Yamaha has published two supplemental booklets to the DX7II/DX7s owner's manual. They are titled *Exploring the Preset Microtunings* and *The Mathematics & History of Microtunings*. Please contact your Yamaha dealer for more information.
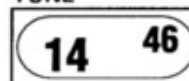
How to enter the 12 tone compiler

press
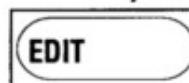
EDIT

UTILITY

TUNE

14   46

press button 14 until screen reads

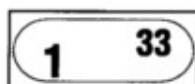LOAD PROGRAM?   >Voyeur >SE!quencer >12 tone

select 12 tone and press YES

Twelve Tone Main Menu
1=Edit 2=Save NO=Exit

"Help" screens show possible choices

On the DX7s: press the STORE button to view all of the "Help" screens for the Micro Tune compiler

Twelve tone compiler

```
( 1    33 )
```

*press button 1
for the 12 tone
compiler*

**use the Key Set buttons
to select notes**

```
Adjust note C      Offset=+60
1=coarse  2=fine  NO=exit
```

*press button 1 for
coarse value
adjustment*

*press button 1 for
fine value
adjustment*

*press NO to
return to
Micro Tune
Compiler menu*

This is E!'s exclusive Twelve Tone Compiler, which makes global scale adjustment fast and simple. The Compiler lets you set a specific offset value for each of the twelve notes per octave.

Use the Key set buttons to select a note to offset. The data entry slider will adjust the offset value, which is in terms of Yamaha's Tuning Units. *When you choose to offset a note, E!'s Twelve Tone Compiler will automatically offset that same note for every octave.*

This compiler makes it easy to construct a "blues scale", or a Lydian scale with a slightly raised sharp 4th, or a scale with Just intonation.
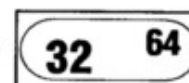
Storing Twelve tone scales
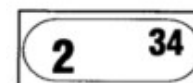
```
( 2    34 )
```
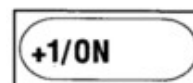*press button 2 to save a 12 tone scale*

```
Store scale xx?
```

```
( 1    33 )  thru  ( 32    64 )
```
*press buttons 1 thru 32
to select the location of
the scale*

```
[ +1/ON ]
```
*press YES 2 times and the scale will be stored
to memory*

Playing Twelve tone scales

```
Micro tuning    >Table select
                12 tone  09
```

By using the Micro Tuning Table Select menu you can play any one of the 10 Preset tunings, the 2 User-defined tunings, and the 32 User-defined Twelve Tone scales.

Please note that these microtuning scales are for DX Voices only, and that ENGINE's Micro Tuning Enable parameter must be turned on for any alternate tunings to be heard for each DX Voice.

DX7IIFD: *storing data to disk*

E! introduces three new disk storage formats to the DX7IIFD. They are accessed in the same way as the original formats by pressing button 16 while in the Edit mode.

• MDR 2
This new MIDI Data Recorder format is exactly the same as the original MDR, with the exception that the file size has been increased to 128K bytes. *Please note that the **ENTIRE** E! memory (SE!quencer, ENGINE, 12 tone microtunings, and stored Performances) will be erased if you choose the MDR IN option.*

• ERAM
The ERAM format will allow you to store the entire state of E!'s internal memory onto one disk - this includes all Voices, Performances, 12 tone microtunings, ENGINE, and SE!quencer data.

• SE!
Storing Songs and Patterns to disk is discussed in the SE!quencer Appendix.

Trouble shooting

here are some suggestions in case you run into any complications

• The DX is not making any sound

(1) Go through the DX's MIDI menus (under button 31) and check the Local Control parameter. You want that to be ON so that notes will be voiced by the DX.

(2) Make sure that the Velocity Level parameter of the Track Assign menu isn't turned all the way down (a "normal" value is usually 05)

(3) If you are in the Octal mode, make sure that:
[A] you have a sufficient amount of Polyphony assigned to each DX Voice you are using;
[B] the DX Volumes are all at an audible level; or
[C] the DX Voices A thru H are all playing a valid patch (you could possibly have a DX Voice playing a non-existent sound, or garbage data)

• Patterns made in SE!quencer sound strange

As a part of E!'s overall initialization, the Global Initialize Utility for SE!quencer will prepare SE!quencer's memory banks for the recording of Patterns and Songs. If you find that some Patterns are "not quite right", it could be that the Global Initialize was not originally done.

• SE!quencer Song is playing wrong Patterns

In order for a Song to be played back correctly, ALL of the Patterns that were used to make it must still be in SE!quencer's memory and they must still be at their original Pattern number location.

T r o u b l e   s h o o t i n g

## • Performance mode doesn't seem to work

PLAY

PERFORMANCE

In order for a Performance mode to be active, you must exit the Edit mode (just press a VOICE mode button) and then press the PERFORMANCE button (the LED light should be on.) You'll now be able to play in your chosen Performance mode until you select a previously stored Performance number, or until you re-enter the Edit mode.

• Performance sounds different than it originally did

It's important to make sure that all of the DX or MIDI voices used in a Performance are not accidentally erased or moved to another memory location. Also, check your MIDI instruments to see if you have changed the MIDI Receive channel since you stored the Performance.

• What if I don't have a second Foot Switch to use as my ENGINE Foot Switch?

1►32 33►64
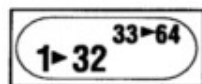
In every Performance mode, the ENGINE button will do everything the ENGINE Foot Switch does: from Player and SE!quencer start/stop, to Track switching in the Normal 1 & 2 modes.

• MIDI acts strangely with E!quipped DX

When using an E!quipped DX as the control center of a MIDI setup, it is important to understand the potential problems that can be caused by **MIDI data loops**. A MIDI data loop can occur when one piece of MIDI gear transmits a message to another piece of gear, which in turn re-transmits the same message back to the first machine. On a stock DX, you may never notice this situation, but on an E!quipped DX, you could have ENGINE set up to complete the loop by taking an incoming message and transmitting it AGAIN to the other piece of gear. When this situation occurs, a single message or group of messages is re-transmitted continuously until one of the machines is overloaded. To avoid this situation, you should **take great care to insure that messages you send thru ENGINE to other MIDI gear are not returned to the DX's MIDI IN port.**

This installation guide is meant for E! boards that are being installed into the Yamaha DX7IID & FD (the E! board for the DX7S requires separate instructions). Please note that while this procedure is fairly straightforward, improper installation could jeopardize your Grey Matter Response, inc. Limited Warranty. *GREY MATTER strongly recommend that you defer installation to a qualified service technician.* Certain knowledge is taken for granted regarding installation instructions. If, therefore, the instructions appear vague and unclear, you should not attempt the installation of E! yourself. Grey Matter Response, inc. assume no responsibility for any damage that installation of the E! system may cause.

Before you even THINK of installing the E! board, you should note that all of the voices that are currently in the machine will be lost as consequence of the installation process. You should back up all voices in the machine before continuing.

You will need the following:
1. a phillips-head screwdriver
2. a regular screwdriver
3. a low-power soldering device
4. some solder
5. You may also find it useful to refer to Yamaha's DX7II service manual.

Step 1   Unplug the DX7II and remove metal bottom.

Step 2   Remove the screws that hold the DM board and disconnect the two ribbon cables

There are three screws on the face of the DM board, three more on the back panel (with the YAMAHA logo), and two others that hold the cartridge connector in place.

Step 3   Take the four rubber bumpers and place one beneath each of the corners of the E! board.

Power supply - DO NOT TOUCH!
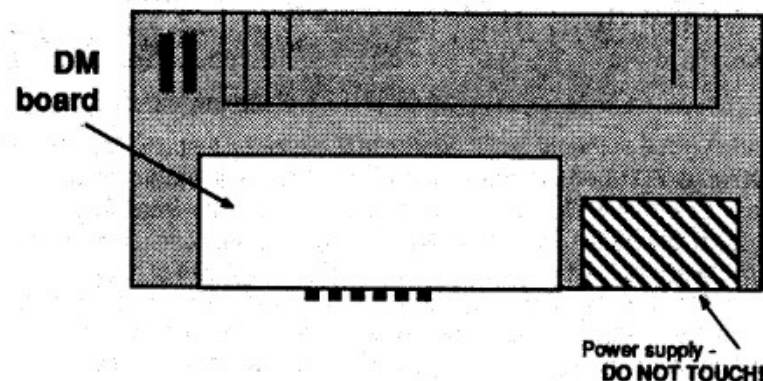
Step 4   Place the E! board onto the exposed back of the DM board. Holding both the DM and E! boards firmly, carefully flip the DM over.

E!'s screw holes will fit into two of the DM's screw holes (where the cartridge connector is.) E!'s ribbon cable and the five wires should wrap around the DM just like the example:
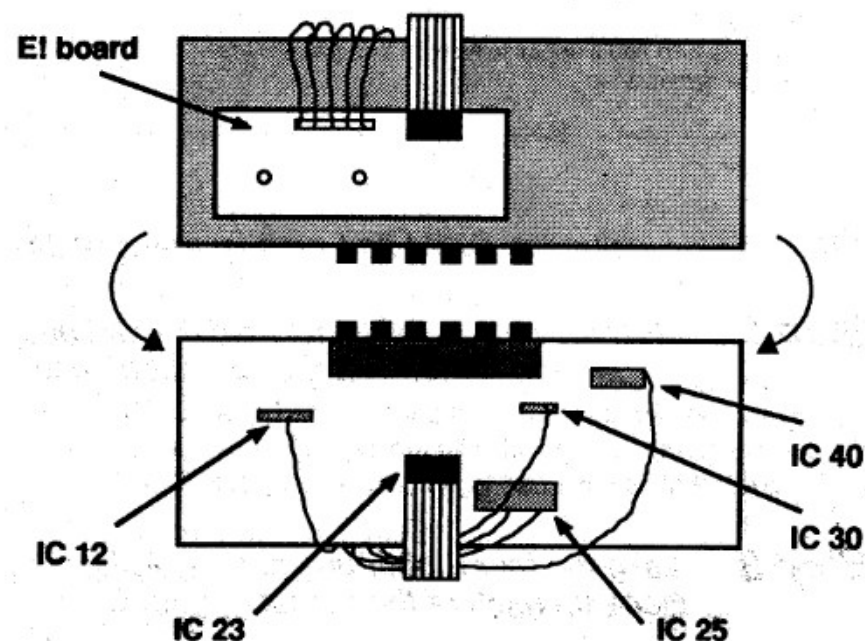
Step 5
Locate the following IC's and solder the five wires to their proper pin location.

Wire color (name on E! board)	IC #	Pin #
GREEN (A15)	IC 40	1
BROWN (R/W)	IC 12	1
ORANGE (*PON)	IC 25	20
BLACK (EN)	IC 30	5
RED (VBATT)	IC 25	28

If you find that some of these pin locations on the DM board are obstructed or already have another wire soldered to them, you can solder E!'s wires to the correct pin on the **back** of the DM board.

Step 6
Remove IC 23 and carefully install E!'s ribbon cable into the socket, making sure that all pins are making contact.

Be sure to keep the original IC 23 chip in a safe place, just in case you need it in the future. If you find that IC 23 has been previously soldered onto the DM board, you will need to remove and replace it with a 28-pin socket. This is a delicate procedure and should be done only by an experienced technician.

Step 7
Inspect all connections. Check all wire locations, solder points, and the ribbon cable connection.

Step 8
Holding E! firmly against the DM board, carefully flip the DM board over once again and place it back in its original position.

Reconnect all cables that were disconnected for the installation. Using the two longer screws included with E!, screw the E! board through the DM board. Now, screw down the entire DM board. Before replacing the back panel, you should flip the DX7II over, connect it to a power source, and turn it on. If the opening message appears on the LCD and then changes to the normal Voice select screen, the E! board is working properly and the back panel can be replaced.

Step 9
IMPORTANT!!! To properly initialize the E!quipped DX7II:

First load a RAM 4 Cartridge into E!'s four memory banks (see pages 5 & 6 of the User's manual.) Be sure to load **WITH** System. [On a DX7IIFD, you can also load an ERAM disk after you have loaded at least one bank with a cartridge. If there is already SE!quencer data stored in the ERAM, there will be no need to continue with the rest of this initializing procedure.]

Next, press button 14 until the screen says "Load Program?" Move the cursor over to **select SE!quencer and press YES (twice.)** Once you are at the SE!quencer main menu, **press button 4 to enter the Utilities mode.** You want to **press button 4 again to enter the Global Utilities.** Press button 1 to erase all SE!quencer memory and then press YES (this initializes all SE!quencer memory banks; if this is not done, SE!quencer's RAM will be corrupt!) Press NO repeatedly to Exit and return to the DX7II Edit mode (when the LCD says "Are you sure?", answer YES.)

Finally, select any PERFORMANCE from Internal RAM to clear the Edit buffers. And that's it!

Supplement

Supplement

Errata

1   Due to the limited size of the DX's edit buffer, the Edit/Compare feature is deactivated when in the Octal mode. If you need to use this feature, just switch the Voice mode to any other mode than Octal.

2   There are two graphic errors in the User's manual: (a) on page 88, the Step Record screen shows buttons 3&4 as controls for the clock time - you should use the Key Set buttons instead, just as the text that follows on page 89 explains; (b) on page 91, the Edit Song screen shows buttons 3&4 as insert/delete controls for step numbers - you should also use the Key Set buttons here, just as the text on page 91 explains.

3   Contrary to what the User's manual states, you do not have to exit the Edit mode in order to activate a Performance mode. The only time a Performance mode isn't active is in the Track Assign menu and in the Voice Select mode.   (To select a stored Performance, you must still exit the Edit mode, press the PERFORMANCE button, and select your stored Performance number.)

E! for the DX7II series User's manual and this Supplemental booklet were printed in the U.S.A.

About the ChordSongs and PlayerSongs

Chords and Player were designed for both solo and group performance situations (and there's nothing stopping you from using them for recording, either.) There are three main points to keep in mind when using the ChordSongs and PlayerSongs:

1   The names which have been given to the Songs are simply there as a general description - a Song like "Dance" doesn't have to be used only for dance music, and a Track labeled as "bass" doesn't have to always be a bass part. You may find a few useful Tracks or even entire Patterns within a Song that might at first seem unlikely.

2   Don't be afraid to manipulate! USE THE TONAL PROCESSOR (change keys by playing different notes in the bottom octave of the keyboard)! Try different voices on the DX or on your MIDI gear. Transpose Tracks. Work with each Track's Velocity Curve/Level to get the most out of E!'s Velocity Processing. Experiment with the differences between Chord Hold On and Off. Have fun!

3   Grey Matter are the last ones in world who would like to see people who enjoy making music be replaced by a box. Chords and Player are only a tool - the rest is all up to you.

ChordSongs

There are 10 ChordSongs, each one having its own particular "voicing style." Each Pattern within a Song is a variation of that style. While the number of Patterns (and the number of Tracks within each Pattern) vary for each Song, you will find that similar parts will remain fairly consistent for most ChordSongs (for example, all "bass" parts are on Track 2, most "piano" parts are on Track 3, etc.) You will also find that there are no parts recorded onto Track1 - this is ENGINE's live play Track, so you can solo along with every ChordSong.

ChordSong 1: Triads

This Song is made up of standard three-note chords in four different styles (Patterns 1 to 4.)

Pattern 1 to Pattern 4

Track 2 only

ChordSong 2: Blues

Pattern 1 to Pattern 2

Track 2 - bass
Track 3 - piano comp.

ChordSong 3: Group Vocal

This Song is made up of 3 typical group vocal harmonies.

Pattern 1 to Pattern 3

Track 2 - contra-bass
Track 3 - bass
Track 4 - tenor
Track 5 - alto
Track 6 - soprano

ChordSong 4: 15-Track

Using this Song, you can play one note each on 15 separate ENGINE Tracks. All of the notes are middle C (C3), so you can use the Transpose parameter to create your own harmonies.

Pattern 1 only

Track 2 to Track 16

ChordSong 5: Club

This Song has 3 Patterns of typical "club music" chords.

Pattern 1 to Pattern 3

Track 2 - bass
Track 3 - piano

ChordSong 6: Orchestral Horns

Pattern 1 to Pattern 4

Track 2 - bass (trombone/tuba)
Track 3 - trombones
Track 4 - french horns

ChordSong 7: Quartal

This Song is made up of chords in the interval of a fourth.

Pattern 1 to Pattern 2

Track 2 - bass
Track 3 - piano

ChordSong 8: Power Brass

Pattern 1 to Pattern 3

Track 2 - bass (trombone/tuba)
Track 3 - trombones
Track 4 - mid-range brass
Track 5 - trumpets

ChordSong 9: Harp

Pattern 1 to Pattern 3

Track 2 - bass
Track 3 - harp

ChordSong 10: String Ensemble

Pattern 1 to Pattern 3

Track 2 - bass violin
Track 3 - cello
Track 4 - viola
Track 5 - violin

PlayerSongs

There are 9 PlayerSongs, each one having its own particular "style." While the number of Patterns (and the number of Tracks within each Pattern) vary for each Song, you will find that similar parts will remain fairly consistent for most PlayerSongs (for example, all "bass" parts are on Track 2, most "piano" parts are on Track 3, etc.) You will also find that there are no parts recorded onto Track1 - this is ENGINE's live play Track, so you can solo along with every PlayerSong.

In most PlayerSongs, you will find that Dynamic Voice Allocation (DVA) can take of all polyphony needs.

PlayerSong 1: Rhythm box

This Song is made up entirely of 3/4, 4/4, and 5/4 beats, so you can mix Tracks for various rhythms - and every beat is a middle C note (C3), so transposing Tracks is easy. Some simple beats (such as straight 1/4 notes) have been split up onto separate Tracks so that they can be tuned differently ("octave bass", gamelon bells, etc.)

Pattern 1: 3/4 time
Track 2 - downbeat
Track 3, Track 4, & Track 5 - 1/4 note
Track 6 & Track 7 - 1/8 note
Track 8 & Track 9 - 1/16 note
Track 10 to Track 16 - variations

Pattern 2: 4/4 time
Track 2 - downbeat
Track 3 & Track 4 - 1/2 note
Track 5 & Track 6 - 1/4 note
Track 7 & Track 8 - 1/8 note
Track 9 & Track 10 - 1/16 note
Track 11 to Track 16 - variations

Pattern 3: 5/4 time
Track 2 - downbeat
Track 3 & Track 4 - 1/2 note
Track 5 & Track 6 - 1/4 note
Track 7 to Track 12 - variations

PlayerSong 2: Arpeggios

This Song is made up of many different single Track arpeggio Patterns. These arpeggio Patterns come in pairs (arpeggio UP and arpeggio DOWN.) There are a total of 16 Patterns.

UP		DOWN	
Pattern 1,2	&	Pattern 3,4	(1 octave)
Pattern 5,6	&	Pattern 7,8	(1 octave rolling)
Pattern 9,10	&	Pattern 11,12	(2 octave)
Pattern 13,14	&	Pattern 15,16	(2 octave rolling)

PlayerSong 3: Guitar strums

This Song is made of one Track Patterns of "acoustic guitar accompaniment" (or whatever else you decide they're good for.) There are a total of 12 Patterns.

Pattern 1 to Pattern 12
Track 2 - guitar strum

PlayerSong 4: Ballads

The Ballad PlayerSong is made up of 9 Patterns with two Tracks each.

Pattern 1 to Pattern 9
Track 2 - bass
Track 3 - piano

PlayerSong 5: Blues

The Blues Song is your basic 12-bar blues. Patterns 1 and 2 combine for a typical "walking bass", while Pattern 3 can be used as a break.

Pattern 1, Pattern 2, & Pattern 3 (break)

Track 2 - bass
Track 3 - piano
Track 4 - bass drum
Track 7 - snare drum

PlayerSong 6: Dance

The Dance PlayerSong is made up of various bass and rhythmic Patterns (definitely not for the faint-hearted.)

Pattern 1 to Pattern 4

Track 2 - bass
Track 3 - piano
Track 4 - horn hits
Track 5 - bass drum
Track 6 - hi hat

PlayerSong 7: Reggae

This Song is made up of four Patterns in the reggae style.

Pattern 1 to Pattern 4 (break)

Track 2 - bass
Track 3 - piano
Track 4 - rhythm guitar
Track 5 - bass drum
Track 6 - tuned percussion

PlayerSong 8: Pop

This Song is made up of four Patterns with a "contemporary pop" feel.

Pattern 1 to Pattern 4

Track 2 - bass
Track 3 - piano
Track 4 - plucked strings
Track 5 - bass drum
Track 6 - snare drum
Track 7 - hi hat/shaker

PlayerSong 9: Beach Party

The last PlayerSong is a fun one! It's a 60's beach party!

Pattern 1 to Pattern 5 (break)

Track 2 - bass
Track 3 - NONE
Track 4 - organ
Track 5 - bass drum
Track 6 - snare drum
Track 7 - bongo
Track 8 - tambourine (break only)

more on MIDI input

MIDI data loops

E!'s powerful new MIDI implementation offers features never before available on a MIDI controller. However, these features can sometimes cause a MIDI data loop in MIDI systems where the DX's MIDI Output is eventually sent to the DX's MIDI Input. For the most part, this situation will arise when you connect the DX's MIDI In and MIDI Out to an external sequencer, hoping to use the DX's keyboard in the Octal mode to record new parts while the external sequencer plays the old parts on the DX's synthesizer. To properly use the DX in this situation, you should set the system up for the following:

1 Turn Local control OFF
2 Go to the MIDI 1 button (button 31) and set a MIDI Output channel (1-16)
3 Set ENGINE's MIDI Input mode to Direct (see pages 35 & 36 of the User's Manual.)
4 Set ENGINE so that all Track Destinations are either "OFF", or point to "DX" Voices (NO TRACKS SHOULD GO TO MIDI CHANNELS.)

SE!quencer special feature

SINGLE

This special SE!quencer feature was not mentioned in the User's Manual: by pressing the SINGLE Voice Mode button, you can instantly switch between the Record Pattern and the Play Pattern mode, making listening to a newly recorded Pattern much more convenient!

Live DX Voice mixdown

You can use the DX Volumes menu in any Performance mode for a live mixdown of all DX Voices. While you are playing a SE!quencer Song, a PlayerSong, or any other Performance, you can mix each Voice live while you play.

All you have to do is press the EDIT button while you are playing your Performance. This will automatically bring up the DX Volumes menu - just move the cursor above each Voice you want to adjust and use the data entry slider to mix the volumes live. You can also edit most of the other ENGINE parameters while still playing a Performance - the only exception is the Track Assign menu, which will stop the Performance.

press

EDIT

(push the PERFORMANCE button to return to the Performance Play screen.)

DX	>A	>B	>C	>D	>E	>F	>G	>H
Volume	92	128	102	65	128	128	0	128

Performance examples

Here are three examples to help familiarize you with the Performance modes and how they interact with ENGINE's Track Assignments and the Octal mode set-ups. Just follow the ENGINE settings listed in the Performance charts and begin exploring the many uses of E!'s Performance modes (blank Performance charts are at the end of this booklet for your use - feel free to photo-copy them.)

Example 1

Performance mode		Song	Tempo	Sync
Normal 1		----	----	----

Track	Destination	Transpose	Patch	Curve	Level
1	DX	00	----	NORM	05
2	DX	+01	----	NORM	05

		Foot Switch 2
		ENGINE

remember to use the Key Set buttons to cycle thru the 16 Tracks

You should begin this example by choosing the Single DX Voice mode and then pressing the PERFORMANCE button to make the Normal1 Performance mode active. Assuming that all of your ENGINE settings are correct, you will be able to switch between Tracks 1 and 2 by pressing the ENGINE Foot Switch(2) or the ENGINE button.

Track 1 is the active keyboard Track, and is playing whatever DX Voice you are currently listening to with a transposition value of 00. If you press and hold the ENGINE Foot Switch, Track 2 will become the active keyboard Track. Track 2 is the very same DX Voice, only this time it has been transposed 1 semi-tone up!

Example 2

In this Example, you'll use the Octal mode along with the 4Way Layer Performance mode create a rich, layered sound. Follow the charts to set up all of the DX voices and then set their ENGINE Track Assignments:

	Voice mode				Total volume	
Octal					99	

Voice	Location	Name	Volume	Shift	Micro Tune	Polyphony
A	E1-15	FullTines	128	+00	off	----
B	~~~	~~~~	128	+00	off	----
C	~~~	~~~~	128	+00	off	----
D	~~~	~~~~	128	+00	off	----

choose whatever Voices you like

for this example, use Dynamic Voice Allocation(DVA) instead of manually set polyphony

Performance mode	Song	Tempo	Sync
4Way Layer	----	----	----

Track	Destination	Transpose	Patch	Curve	Level
1	DX A	~~~~	----	~~~~	~~~~
2	DX B	~~~~	----	~~~~	~~~~
3	DX C	~~~~	----	~~~~	~~~~
4	DX D	~~~~	----	~~~~	~~~~

*set these parameters to
your tastes*

Now, when you play this Performance, you will hear Tracks 1-4 layered together. After playing for a while, try experimenting with different Transpositions and Velocity Curves/Levels for each Track, and using the Controller Map under ENGINE button 27.

By carefully choosing your Voices, you can create many different types of sounds: show-stopping solos; rich, realistic acoustics; or subtle atmospherics.

Example 3

In this final example, you will be introduced to Player, one of ENGINE's auto-accompaniment Performance modes. By using the Octal mode again, you can play multi- track patterns without any external instruments (however, if you do have some MIDI instuments, feel free to use them as the Destinations of some Tracks.) Just follow the charts:

*choose whatever PlayerSong
you want*

Performance mode	Song	Tempo	Sync
Player	1~10	175	INT

Track	Destination	Transpose	Patch	Curve	Level
1	DX A	~~~~	----	~~~~	~~~~
2	DX B	~~~~	----		
3	DX C				
4					

*use the same Track Assignments as in
Example 2*

Clock out	Chord hold	MIDI In mode	Foot Switch 2
on	on	normal	ENGINE

*turn Clock out ON if
you want your MIDI
drum machine to play
along*

					Voice mode					Total volume
Octal							99			

Voice	Location	Name	Volume	Shift	Micro Tune	Polyphony
A	~~~	~~~~	128	+00	off	---
B	~~~	~~~~	128	+00	off	---
C	~~~	~~~~	128	+00	off	---
D	~~~	~~~~	128	+00	off	---
E						
F						

follow the suggested voicings for each Track of the PlayerSong (Track 2: bass, Track 3: piano, etc.)

leave DVA on (you may want to set some Polyphony - like 4 notes - for the DX Voice on Track 1 so you can solo)

Now, when you activate the Performance mode, the bottom octave of the DX's keyboard will play a Player-Song using DX Voices A thru D (or whatever MIDI instruments you have chosen.) To begin playing, just press any key in the bottom octave of the keyboard. All you have to do is play another note to change the key of the entire PlayerSong. Each Track is even velocity sensitive - you can adjust the Velocity Curve/Level for each Track for more control over the velocity response.

Please remember that each PlayerSong can be manipulated by turning Tracks on and off or by combining the patterns for more complexity (be sure to read the "Using Player" section in the User's Manual and the discussion at the beginning of this booklet for more information.)

To stop Player, simply press the ENGINE Foot Switch or the ENGINE button.

Performance mode settings

PERFORMANCE #_____ name_____

Performance mode		Song	Tempo	Sync

Track	Destination	Transpose	Patch	Curve	Level
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Clock out	Chord hold	MIDI In mode	Foot Switch 2

DX Voice mode settings

PERFORMANCE #_____ name_____

Voice mode		Total volume

Voice	Location	Name	Volume	Shift	Micro Tune	Polyphony
A						
B						
C						
D						
E						
F						
G						
H						

Dual detune	Balance	Split point

DVA	EG forced damp	Micro Tuning preset

PERFORMANCE #_____ name_____

Performance mode (Chords or Player only)   Son

Note	Key	Scale	Pattern
Alternate			
C 1			
C#			
D			
D#			
E			
F			
F#			
G			
G#			
A			
A#			
B			
C 2			

PERFORMANCE #_____ name_____

Patterns used   Song

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	

Step 1   2   3   4   5
repeats: repeats: repeats: repeats: repeats:

6   7   8   9   10
repeats: repeats: repeats: repeats: repeats:

11   12   13   14   15
repeats: repeats: repeats: repeats: repeats:

16   17   18   19   20
repeats: repeats: repeats: repeats: repeats:

21   22   23   24   25
repeats: repeats: repeats: repeats: repeats:

paste together copies for Songs over 25 steps long

Limited Warranty

These warranty provisions are an important part of your purchase. Please read the entire warranty statement in order that you may be familiar with the terms applicable to this warranty. If you have any questions, please contact your certified Grey Matter installer or dealer or contact Grey Matter directly.

CONDITIONS OF WARRANTY

If during the one (1) year period that immediately follows the date of original purchase, your Grey Matter product is found to have a defect in material or crafting, Grey Matter Response, Inc. will repair such defect without charge for Grey Matter authorized parts or Grey Matter authorized labor.

LIMITATIONS

This warranty applies only to products that have been installed by a Certified Grey Matter Installer. Please note that Grey Matter is not responsible for any defect or damage that is the result of improper installation.

This warranty is available to the original purchaser only. It is not transferrable. This warranty is valid only if a new Grey Matter product is purchased. Contact Grey Matter directly if you have any questions in this area.

The warranty as stipulated herein is applicable only in the fifty states of the USA and the District of Columbia. It is not applicable in the possessions or territories of the USA or in any other country.

This warranty is the only express warranty which Grey Matter makes in connection with your Grey Matter products. Any implied warranty applicable to the product, including the warranty of merchantability, is limited to the duration of the express warranty.

Grey Matter excludes and shall not be liable in any event for incidental or consequential damages. Some states do not allow limitations on how long an implied warranty may last. Therefore, these limitations and exclusions may not apply to you.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

OWNER'S RESPONSIBILITIES

It is vitally important that you read your User's Manual in order that you may be familiar with the proper maintenance and uses of your Grey Matter product. In the unlikely event that your Grey Matter product is defective, it is necessary that you assume certain responsibilities:

1 Return the Owner's Registration card and/or be prepared to provide Proof of Purchase (failure to return Owner's Registration does not affect your warranty, but may be a cause of delay for any Grey Matter technical support.)
2 Notify your Certified Grey Matter Installer of any alleged defect promptly upon discovery.
3 Contact Grey Matter directly for proper repair procedure and the address of your local certified installer.
4 No products can be returned directly to Grey Matter Response, Inc. Units must be checked and returned by a Certified Grey Matter Installer
5 Should the product prove to be defective by Grey Matter, the product will be repaired or replaced and re-installed.

EXCLUSIONS

Grey Matter's warranty does not apply to the following:

1 Products subjected to abnormal strain, neglect, abuse, modification, static charges, strong electromagnetic, magnetic, and radioactive fields, or accidental damage.
2 Products purchased from dealers not authorized to retail Grey Matter products.
3 Products that have not been installed by a Certified Grey Matter Installer.
4 Products whose trademark, name, or identification numbers have been altered or removed.
5 Similar or imitations of Grey Matter products.

If you have unresolved points of concern or in the event that a local dealer or installer is not available, please do not hesitate to contact Grey Matter directly at 15916 Haven Ave. Tinley Park, IL 60477   phone: (312) 349-1889